INDEPENDENT CRITICAL STUDY

EU Emissions Trading System 2 (ETS2)

With specific reference to Ireland's geographic, infrastructural and social circumstances

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PURPOSE AND SCOPE OF THIS STUDY

ETS2 is an EU environmental policy whose stated goal is climate neutrality by 2050. Its operational mechanism is the deliberately and artificially engineered permanent increase in the price of fossil fuels — petrol, diesel, heating oil, natural gas — through a system of carbon allowances that fuel suppliers must purchase and whose cost they pass directly to consumers. The allowance price rises without ceiling as the annual cap tightens, year on year, without reversal. The intended endpoint is that fossil fuels become unaffordable. This is not a market movement. It is a legislative construction. This study examines what that means for the people it will affect.

During recent widespread fuel cost protests, it became evident that the general public has virtually no awareness of this policy or the permanent, ever-increasing price increases it is designed to impose. Politicians who addressed public concerns about high fuel prices failed to mention ETS2 on any occasion — whether they were unaware of it or chose to ignore it, it is difficult to say which is worse.

This study sets out to answer the questions that should have been asked before Ireland was committed to this policy, and demonstrably were not. No independent assessment of ETS2's specific consequences for Ireland's rural population, agricultural sector, island geography, or emergency resilience was conducted before transposition. Ireland had no legal opt-out — the directive was mandatory — and when Ireland missed even the transposition deadline of June 2024, infringement proceedings were opened against it, only dropped when Ireland complied in December 2024. The questions of proportionality, feasibility, and human cost that any responsible government should have demanded answers to before implementation were never asked. This study asks some of them at least.

It examines every significant shortcoming, unacknowledged consequence, and disproportionate impact that ETS2 is likely to produce if carried out as currently designed — impacts that are absent from, understated in, or unacknowledged by the policy's own documentation — and partially examines how ETS2 operates in conjunction with other similarly presented policies in a mutually reinforcing but separately presented manner.

The analysis proceeds through the following questions, in order:

1. What does ETS2 declare as its intent, and what are its key operational parameters?
2. What does the policy intend that it does not state explicitly — and what impacts would necessarily follow from its implementation that are nowhere acknowledged in its own documentation?
3. What are the impacts not explicitly stated but clearly consequential — specifically, what is the wider impact of this policy on people's lives in Ireland given its landscape, dispersed residential patterns, island geography, and current dependence on individual mobility, and to what extent does it threaten their ability to sustain themselves and continue living where they currently live?
4. What does the policy intend to change, in what respects, and to what extent — and what is the full scope of transformation it presupposes?
5. What does the stated goal of reducing car journeys by half actually mean in practice: do individuals keep their cars and drive half as much, or does it imply a reduction in the number of cars on the road — and what are the human consequences of each interpretation?
6. How are Building Energy Ratings determined, how transparent is that methodology, does it constitute a reliable basis for the retrofit obligations and financial penalties this policy supports — and how does it interfere with property values and restrict the saleability of homes whose owners decline to submit?
7. What is ETS2's intent and impact on Irish agriculture, and what are its negative consequences for that sector?
8. What is ETS2's intent and impact on Irish fisheries, and what are its negative consequences for that sector?

9. What is ETS2's impact on the transport of goods and materials — and is the decarbonisation it claims to deliver in this sector realistically achievable?
10. What is ETS2's impact on all forms of recreational travel, both domestic and international, including the long-term trajectory of aviation costs under the parallel sustainable aviation fuel mandate?
11. What are the economic, social, and health impacts of ETS2, broken down by demographic group — including farmers, fishers, construction workers, transport workers, hospitality workers, elderly people, rural residents, urban residents, commuters, and others?
12. What secondary, tertiary, and further-order consequences can reasonably be anticipated, taking into account Ireland's electricity grid capacity, residential patterns, and island geography?
13. What provisions does the policy make for energy supply disruptions — and does it adequately account for the human cost of scenarios in which the electrified infrastructure it depends upon becomes unavailable?
14. What level of coercion is required to carry out this policy, and is that coercion acknowledged?
15. Does the policy provide a quantified estimate of its impact on actual climate variables — temperature, sea level, extreme weather — over its stated timeframe? If not, what are the implications of that absence for assessing the policy's proportionality?
16. Which elements of this policy are safe to implement in their current form, and what fundamental changes are required before the remainder should be considered at all?

PART 1 — SUMMARY OF DECLARED INTENT

The EU Emissions Trading System 2 (ETS2) was created through Directive (EU) 2023/959, amending the ETS Directive as part of the Fit for 55 legislative package adopted in 2021. It establishes a new, separate cap-and-trade carbon pricing scheme covering sectors not previously subject to EU carbon pricing: road transport fuel combustion, building heating fuels, and small industrial installations. The 25,000 tonne CO2 threshold refers to a per-installation annual limit — any single industrial site whose fuel combustion emissions fall below this figure is captured by ETS2 rather than ETS1. This is not a national or EU-wide ceiling but a threshold applied to each individual installation to determine which trading system governs it.

Unlike ETS1, which regulates emissions at source — power plants and large industry — ETS2 operates upstream. The regulated entities are fuel suppliers: petrol, diesel, gas oil, kerosene, LPG, natural gas, heavy fuel oil, coal and coke suppliers registered with national revenue authorities. These suppliers must monitor, report, verify and purchase allowances at auction to cover the carbon content of all fuels they release for consumption. These allowance costs are designed to pass fully through to consumers as fuel price increases — the mechanism is explicitly intended to make fossil fuels progressively more expensive at the point of use. There is no stabilising phase, no settling point, and no ceiling after the initial soft cap expires in 2030. The cap tightens annually without reversal, creating permanent and escalating upward pressure on the price of every covered fuel for as long as fossil fuels remain in use. Peat, waste fuels, solid biomass and charcoal from wood are excluded.

1.1 Key Parameters

Start of monitoring and permitting	1 January 2025
Full trading and compliance start	2028 — delayed from 2027 by EU Council/Parliament agreement, November 2025
First allowance surrender deadline	31 May 2028 (for 2027 verified emissions)
Emission reduction target	42% below 2005 levels by 2030
Annual cap reduction factor	5.15% per year; 5.38% from 2028 onwards
Soft price ceiling (first 3 years only)	EUR 45/tonne CO2 in 2020 prices, inflation-adjusted
EC projected allowance price 2027-2030	EUR 45-80/tonne
Market futures price (EEX, launched 2025)	~EUR 73.57/tonne for 2028 delivery
Independent model range (PRIMES model)	EUR 71-261/tonne by 2030 depending on energy efficiency ambition
Bloomberg/Vertis financial estimates	Up to EUR 149-259/tonne by 2030
Social Climate Fund total mobilisation	At least EUR 86.7 billion (2026-2032): EUR 65bn from ETS revenue + 25% Member State co-financing
Ireland's SCF allocation	1.02% of total = approx. EUR 663 million (2026-2032)
Ireland's carbon tax derogation status	Applied December 2023 under Article

	30e(3); if approved, ETS2 surrender obligation waived 2027-2030 where national carbon tax exceeds average ETS2 auction clearing price
Ireland's carbon tax trajectory	EUR 56/tonne in 2024; rising to EUR 100/tonne by 2030
EU 2040 climate target	90% net GHG reduction vs 1990 levels — agreed in revised EU Climate Law, 2026
Long-term endpoint	Climate neutrality by 2050; ETS1 cap reaches zero by approximately 2039

1.2 Declared Policy Rationale

ETS2 exists because the sectors it targets have not decarbonised adequately under existing policies. Transport remains 93% dependent on fossil fuels. EU road transport emissions fell only 4.4% between 2005 and 2023, compared to a 50% reduction in ETS1-covered power and industry over the same period. Buildings account for 40% of total final EU energy use; direct building emissions fell 37% from 2005 to 2023, but more than half of EU residential heating still uses fossil fuels. The policy is designed as one element of a broader mix including the Social Climate Fund, the Effort Sharing Regulation, building energy performance standards, CO2 standards for new vehicles, and the Alternative Fuels Infrastructure Regulation.

PART 2 — DECLARED INTENT VS INTENT APPARENT BETWEEN THE LINES

This section analyses the gap between the policy's stated goals and its structural implications — what must necessarily follow if the policy functions as designed, regardless of whether these outcomes are explicitly acknowledged.

2.1 What is Explicitly Stated

- ETS2 creates a price signal to incentivise voluntary behaviour change: switching to EVs, improving building insulation, reducing fuel consumption.
- The Social Climate Fund cushions vulnerable households and micro-enterprises during the transition period (2026-2032).
- The mechanism is a market instrument: governments set the cap; the market sets the price within it.
- Complementary national and EU policies are described as essential alongside ETS2 to achieve actual emissions reductions.
- The policy is described as economically efficient because it reduces emissions at the lowest achievable cost across the EU.

2.2 What is Not Stated But Structurally Implied

2.2.1 The Irreversible Economic Obsolescence of Fossil Fuels

The cap declines annually and permanently. No mechanism in ETS2 allows the carbon price to return to zero or fossil fuel costs to revert to pre-ETS2 levels. The policy is structurally designed to make fossil fuels progressively and permanently unaffordable as the primary mode of heating and transport. The language used is of incentives and market signals, but the structural outcome of a declining, non-reversible cap is the economic elimination of fossil fuel use within the policy's timeframe. This is the mechanism, not a side effect.

2.2.2 The Policy Assumes Alternatives That Do Not Yet Exist

The policy's effectiveness depends entirely on affordable EVs, adequate EV charging infrastructure, affordable heat pumps, grid capacity to power both, and public transport alternatives. ETS2 does not create these directly. The implicit assumption is that these alternatives will be widely available before the price signal becomes prohibitive. In Ireland's case, this assumption is not empirically supportable within the relevant timeframe.

2.2.3 The Social Mitigation is Structurally Insufficient

The EEA explicitly acknowledges that low- and lower-middle income households, as well as peri-urban and rural households that depend heavily on cars, may be disproportionately affected financially. The SCF remedy is time-limited to 2026-2032. Ireland's allocation of approximately EUR 663 million over six years must cover direct income support, structural investment in EVs, public transport improvement, and building retrofitting for the entire vulnerable population. Retrofitting a single Irish home to heat pump standard typically costs EUR 25,000-75,000. Ireland has approximately 700,000 oil-heated homes. The fund is structurally inadequate for the scale of transformation required — and there are serious further concerns about the reliability of the evidence base on which key interventions are justified, including the methodology used to assess home energy performance, which are examined in detail in Part 6. The specific inadequacy of this allocation in human terms is examined further in Part 16.

2.2.4 The Policy is Premised on Reorganising Settlement Patterns

The Avoid-Shift-Improve (ASI) framework embedded in the EEA's analysis of ETS2's effectiveness explicitly includes land-use planning measures to reduce the need for long-distance commuting, promotion of teleworking, and consolidation of local services. These are preconditions for the policy's projected emission reductions to materialise. The unstated implication is that Ireland's dispersed one-off rural housing model is incompatible with the policy's long-term intent — an implication that has never been put to the affected population, never indicated in any public communication about ETS2, and never subjected to democratic discussion of any kind. The people whose lives and communities would be reorganised under this logic have received no indication that this is what the policy presupposes. They could be entirely blindsided by a transformation of where and how they live, scheduled to take full effect from 2028 onwards, without ever having been consulted or even informed that this was the underlying intent.

It is worth noting that this narrative briefly surfaced in public discourse in the immediate aftermath of Storm Eowyn. Writing in the Irish Times on 6 February 2025, Professor Hannah Daly of University College Cork argued that Ireland's pattern of one-off rural housing was itself a contributing cause of the outage, and that 'future planning should prioritise dense, well-serviced development' with 'more compact communities' delivering 'lower grid maintenance costs and greater resilience.' The same piece expressed dismay that commentators had praised open fires, gas stoves and diesel generators during the outage — framing public appreciation of fossil fuel resilience as a problem for the clean energy transition rather than as a rational response to demonstrated vulnerability. This represents precisely the logic embedded in ETS2's design: that the way Irish people live is the pathology, and that the appropriate response to an infrastructure failure is to change the population's residential habits rather than to build infrastructure adequate to the population that exists.

2.2.5 The Soft Price Cap Disappears After Three Years

The EUR 45/tonne ceiling operates only during the first three years (2028-2030). After 2030, no price cap is specified. Market projections suggest prices of EUR 149-261/tonne by 2030. At EUR 100/tonne, the carbon cost adds approximately EUR 0.23/litre to petrol or diesel. Combined with Ireland's existing carbon tax trajectory to EUR 100/tonne, cumulative fuel price impacts could reach EUR 0.40-0.60/litre above current pre-tax levels within this decade.

WARNING: CRITICAL FINDING

The central undeclared structural implication of ETS2 is this: the policy is designed to make fossil-fuel-based living in dispersed, rural, car-dependent settlements economically unsustainable over time. This is the necessary consequence of a perpetually tightening cap on the fuels that provide the only practical means of mobility and heating for a large proportion of Ireland's rural population. Whether this is an intended or merely an accepted consequence is a political question — but it is not a contingent or uncertain outcome. It is the mechanism.

PART 3 — IMPACTS NOT EXPLICITLY STATED BUT CLEARLY CONSEQUENTIAL

3.1 Direct Consumer Fuel Price Impacts

Carbon price EUR 45/tonne (initial soft ceiling)	~EUR 0.10/litre additional on petrol/diesel
Carbon price EUR 73/tonne (2028 futures, early 2025)	~EUR 0.17/litre additional
Carbon price EUR 100/tonne	~EUR 0.23/litre additional
Carbon price EUR 200/tonne (upper model estimate)	~EUR 0.46/litre additional
Ireland national carbon tax by 2030 (if derogation not approved)	Additional EUR 0.23/litre (EUR 100/tonne)
Combined potential peak: ETS2 + carbon tax (no derogation)	EUR 0.33-0.69/litre above current pre-tax price
Annual additional cost: rural driver 25,000km at 7L/100km	EUR 595-2,065/year additional at EUR 45-200/tonne range
Annual additional cost: medium farm machinery operator	EUR 1,150-5,000+/year estimated additional operating cost

3.2 Home Heating Cost Impacts

Buildings are simultaneously covered by ETS2. Households using oil or gas heating face cost increases on both transport and heating fuels simultaneously. This double exposure is most severe for rural Irish households, which are disproportionately oil-heated (kerosene) and car-dependent, with no practical alternative to either.

Typical Irish oil-heated home: annual kerosene consumption	Approximately 600-1,500 litres depending on house size, insulation, occupancy and whether supplementary solid fuel heating is used (oilprices.ie; industry sources)
Additional annual heating cost at EUR 100/tonne ETS2	EUR 276-345/year
Additional annual heating cost at EUR 200/tonne ETS2	EUR 552-690/year
Oil-heated homes in Ireland (estimate)	Approximately 700,000
ETS2 impact on energy poverty	Expected to increase before SCF measures take effect

3.3 Capital Expenditure Required for Transition

- New EV in Ireland: EUR 25,000-50,000; net cost after grants: EUR 15,000-40,000.
- Used EV market: second-hand EVs are available in Ireland but uptake remains low. Documented cases of significant battery degradation in vehicles only a few years old, unexpected range loss in cold weather, and costly battery replacement bills have generated well-founded consumer caution —

compounded by charging infrastructure gaps and uncertain resale values in a market where the technology is still evolving.

- Heat pump installation: EUR 25,000-75,000 typical in Ireland, with SEAI grants of EUR 6,500-10,500. Whether a heat pump is genuinely suitable for a given property is a more complex question than installation cost alone — an issue examined in detail in Part 5.
- Full home retrofit to heat pump-suitable standard: the average deep retrofit cost is now €50,000 before grants, rising to €75,000 or more for older or larger properties (SEAI scheme data, early 2025). SEAI grants of €6,500-€10,500 are available but leave a substantial net cost for most households.
- For households without savings or credit access — disproportionately rural, elderly, and low-income — these expenditures are not achievable regardless of the strength of the price signal.

3.4 Asset Depreciation and Stranding

Existing petrol and diesel vehicles and oil-fired heating systems will depreciate more rapidly as ETS2 tightens and the 2035 ban on new ICE vehicle sales approaches. It is important to be precise about what this means: the 2035 regulation prohibits the sale of new petrol and diesel passenger cars. It does not make fossil fuels unavailable, and existing vehicles can continue to be driven and fuelled beyond that date. A stranded asset in the energy context means a system that becomes economically unviable due to escalating fuel costs or regulatory pressure — not one that ceases to function. A well-managed, efficiently heated home with an oil boiler is not a stranded asset simply because a theoretical BER rating labels it poorly. The relevant risk is financial: as carbon costs rise, the operating cost of fossil-fuel systems increases to the point where households that cannot afford to replace them face a sustained and growing burden, while those who can afford to switch benefit from lower running costs. This constitutes a wealth transfer from those who cannot make the transition to those who can. Lower-income and rural households are disproportionately exposed.

3.5 Supply Chain and General Inflation Effects

Road transport is the backbone of goods distribution in Ireland. All goods transported by road — virtually all consumer goods, food, building materials, medicines and farm inputs — will carry higher distribution costs. Ireland's island geography, with no continental rail freight alternative, makes this inflationary channel stronger than in most EU Member States.

3.6 Settlement Pattern: Dispersed One-Off Rural Housing

Ireland's settlement pattern is characterised by extreme dispersal. A large proportion of the rural population lives in one-off housing — individual dwellings on agricultural or rural land, often several kilometres from the nearest town, service, or public transport route. This is a deep cultural norm reinforced by decades of planning policy, rooted in the relationship between the Irish people and the land they live on, and reflected in a persistent and strong public demand for rural housing planning permissions. It cannot be rapidly changed — and more fundamentally, the notion that a policy framework originating in Brussels could or should arbitrarily reorganise where an entire population chooses to live, without consultation, without consent, and without even the acknowledgement that this is what is being contemplated, should not be accepted as a legitimate function of any government. The communities whose way of life would be disrupted by such a reorganisation have not been asked. They have not been warned. And in most cases, they have no idea it is coming.

Research published in Transport Policy (Carroll, Benevenuto and Caulfield, 2021) identifies widespread Forced Car Ownership (FCO) in rural Ireland — owning a car not by preference but because there is no alternative for basic economic participation. In 20 of 26 counties, transport disadvantage correlates statistically with deprivation. Three out of four journeys outside Dublin were made by car in 2016. This is not marginal — it describes the structural condition of rural Ireland.

A 2023 Transport Poverty Risk Index study (ScienceDirect) using Ireland as a case study found clear spatial disparities in transport poverty risk and confirmed that changes in fuel prices directly translate into transport poverty risk — exactly the mechanism ETS2 activates.

Ireland has 165,000km of electricity distribution lines — four times the EU per-capita average — a direct consequence of this dispersed settlement pattern. This extraordinary network extent is directly relevant to the slow pace of power restoration after major weather events and to the cost of grid upgrades needed for EV and heat pump adoption.

3.7 Island Geography: No Continental Alternatives

- No practical modal alternative to road transport exists for the vast majority of personal journeys and freight movements.
- All imported goods arrive by sea and are distributed entirely by road. ETS2 raises the cost of that distribution leg for everything consumed in Ireland.
- No rail freight network exists capable of substituting for last-mile road distribution to dispersed rural communities.
- International travel requires aviation or ferry. In 2019, 38 million passengers arrived and departed from Irish airports. Ireland records approximately 3,678 flights per 1,000 population annually — among the highest rates in Europe — reflecting structural dependence on aviation, not consumer preference.
- Ireland's island status means its citizens face higher incremental costs from carbon pricing on both domestic and international travel than most EU Member States, with fewer alternatives. This structural disadvantage is not acknowledged in ETS2 documentation.

3.8 Public Transport Outside Major Cities

Outside Dublin, Cork, Limerick, Galway and Waterford, public transport in Ireland is sparse, infrequent, and often limited to the Rural Transport Programme — a subsidised community service with restricted coverage and hours. For the majority of rural residents, there is no realistic public transport alternative to the private car for commuting, healthcare, school transport, or shopping. The Avoid-Shift-Improve framework assumes modal shift is achievable. In most of rural Ireland, it is not, and cannot become possible within ETS2's critical 2028-2032 pricing phase without investment on a scale and pace that has no precedent in Irish transport history.

3.9 EV Infrastructure and Grid Capacity

Ireland has approximately 212,000 EVs (early 2026) against a government target of 630,000+ by 2030. The public charging network is less than half the EU average per capita. Grid constraints outside Dublin are actively preventing charger rollout.

EirGrid issued a warning in February 2026 that Ireland faces a potentially challenging situation meeting electricity demand between 2026 and 2028. Data centres already consume 20-22% of total Irish electricity and are projected to reach 30-32% by the early 2030s — competing directly for capacity with the EVs and heat pumps ETS2 demands. Ireland's January 2026 electricity demand was the highest January demand ever recorded: a 4.5% increase on January 2025. EirGrid confirmed the need for 200-400 MW of additional generation capacity in the early 2030s.

The implication: ETS2’s price signal pushes consumers toward EVs and heat pumps precisely when the grid may be unable to power them reliably. The three largest demands on Ireland’s electricity system — decarbonising transport, decarbonising heating, and powering data centres — are accelerating simultaneously against a constrained grid.

In December 2025, the CRU approved a €18.9 billion grid investment programme for 2026-2030, backed by a £3.5 billion government equity injection — the largest single investment in Ireland's electricity network in its history. This includes infrastructure to connect up to 1 million EVs and support significant heat pump adoption. This commitment is noted and is not insignificant. However, the critical constraint this study identifies is not the absence of an investment plan — it is the gap between the plan's timeline and the policy's demands. ETS2 begins operating in 2028. The investment programme runs to 2030 and beyond. The grid capacity gap documented by EirGrid runs through 2026-2028 — meaning the constraints are at their most acute precisely as ETS2 becomes operational in 2028. Current EV adoption stands at 212,000 against a target of 630,000 by 2030, and the investment to support that connection cannot precede the grid constraints that will bind in the interim. The plan is welcome. The sequencing remains a serious problem.

3.10 The Cumulative Impact: Inability to Sustain Current Lives in Current Places

The combined effect of ETS2's mechanisms on Irish rural residents creates a sustained structural economic pressure that, over the policy's operational lifetime, makes it increasingly unviable to live normally in many rural parts of Ireland. The pressure operates simultaneously across:

- Transport costs: higher petrol/diesel; no public alternative; no affordable EV; no adequate charging infrastructure.
- Heating costs: oil-heated homes; no affordable heat pump route; retrofit costs beyond reach for many.
- Food and goods costs: higher distribution costs passed through to all consumer prices.
- Farm operating costs: higher fuel costs with no modal alternative and no price pass-through ability.
- Capital requirements for transition: EV (€15,000-40,000 net of grants) plus heat pump installation (€25,000-75,000 before grants) plus full deep retrofit (average €50,000 before grants) could total €90,000-€190,000 per household at current costs — figures that make the transition financially impossible for the majority of rural Irish households without substantial additional support that is not currently available.

WARNING: CRITICAL FINDING

ETS2 does not state rural depopulation as an objective. But it creates the precise economic conditions — sustained, compounding, inescapable cost pressure on mobility and heating with no affordable alternative available — that would predictably accelerate rural depopulation in Ireland. The policy's designers have acknowledged the social risk for rural and low-income populations but have not provided remedies adequate to Ireland's specific circumstances.

PART 4 — WHAT THE POLICY INTENDS TO CHANGE AND TO WHAT EXTENT

Parts 1 and 2 of this study address what ETS2 declares and what it implies. This section identifies the specific categories of change the policy intends, including those it does not explicitly name, and assesses the overall scale of transformation it requires.

4.1 Explicitly Intended Changes

- The volume of private vehicle kilometres: reduced through higher operating costs, incentivising trip reduction, carpooling, and modal shift.
- Infrastructure investment: SCF revenues directed to public transport, EV charging networks, building retrofit, and active mobility.
- Consumer investment decisions: fossil-fuel-based systems become progressively less economically rational as carbon prices rise, intended to drive household-level transition to EVs and heat pumps.

It should be noted that while the halving of car journeys is referenced in the EU Sustainable and Smart Mobility Strategy rather than ETS2's text specifically, ETS2 is explicitly described in EU documentation as one of the primary instruments intended to deliver that target. A policy cannot disown the outcome it is designed to produce. If ETS2 makes fossil fuel vehicles unaffordable, the resulting reduction in car journeys is not an unintended side effect — it is the mechanism working as intended.

4.2 Implicitly Intended or Structurally Necessary Changes

- Settlement patterns: land-use planning measures cited in EEA analysis as necessary to reduce mobility demand imply the current dispersed settlement model must change.
- Commuting patterns: teleworking and trip consolidation are cited as Avoid strategies — implying a structural shift in where and how people work.
- Agricultural structure: higher operating costs for fossil-fuel-dependent farming will accelerate pressures on marginal farm viability and farm consolidation.
- Property value geography: properties in areas with poor EV infrastructure, no public transport, and oil heating face structural devaluation as compliance costs become apparent to lenders and insurers.

4.3 The Extent of Change

The extent is total within the policy's timeframe. ETS2 is a continuously ratcheting mechanism designed to reduce covered emissions by 42% by 2030 and to support the path to zero net emissions by 2050. The long-term structural endpoint is the elimination of fossil fuel combustion in transport and buildings. This is not a marginal adjustment — it is a complete transformation of how people heat their homes and move between places, on a timescale of approximately 25 years, with the most acute cost pressure concentrated in the decade from 2028 to 2038. What is not intended to be preserved — though never stated — is the current system in which fossil fuels provide affordable, reliable, universally accessible mobility and heating regardless of location or income.

PART 5 — HALVING CAR JOURNEYS: TWO INTERPRETATIONS AND THEIR CONSEQUENCES

5.1 What the Target Actually States

ETS2's supporting analytical framework, including the EEA's transport sector analysis, references a target of halving private car kilometres travelled by 2030-2035 relative to current levels as a necessary condition for meeting the EU's transport emission reduction goals. This target is cited across multiple policy documents. What it means in practice for individual citizens and households is never specified. Two fundamentally different interpretations are possible, and the human consequences of each are substantially different.

5.2 Interpretation One: The Same Number of Cars, Driven Half as Much

Under this interpretation, current car owners retain their vehicles but reduce their annual mileage by approximately half. For urban commuters with access to public transport, cycling infrastructure, or remote working options, this is potentially achievable. For rural Ireland, it is not. A farmer driving to fields, a rural nurse commuting to a hospital, a parent driving children to school across dispersed settlements with no bus service, an elderly person attending medical appointments — none of these journeys can be halved without directly compromising the activity they serve. The journey is not discretionary. It is the means by which the person functions. Halving it does not mean driving less. It means doing less — working less, accessing healthcare less, participating in community life less.

This interpretation also raises the question of enforcement. A carbon price signal increases the cost of each journey but does not prevent the journey from being made. If the policy's target requires a 50% reduction in vehicle kilometres, and the price signal alone does not achieve it, further intervention — rationing, restriction, or prohibitive pricing — is the logical next step. The policy does not state this. It does not need to.

5.3 Interpretation Two: Half as Many Cars Among the Population

Under this interpretation, the number of cars in circulation is reduced by half — meaning a significant proportion of current car owners no longer own a vehicle. For this to occur voluntarily, EVs must be affordable and practical for all current car owners, public transport must be adequate for all journeys currently made by car, and the charging and infrastructure requirements must be met nationwide. None of these conditions currently exist in rural Ireland, and none can be met within ETS2's critical pricing window without investment at a scale and pace that has no precedent in Irish infrastructure history.

For this to occur involuntarily — through price pressure that makes car ownership unaffordable for lower-income households — it represents a direct removal of mobility from those least able to replace it. A rural household that can no longer afford to run a car does not gain access to public transport that does not exist. It loses access to employment, healthcare, education, and social participation. The car is not a luxury in rural Ireland. It is the infrastructure.

5.4 Which Interpretation Applies — And What Either Means for Ireland

The policy does not specify which interpretation is intended. Both are consistent with the stated target. The honest answer is that both will occur simultaneously — some households will drive less, some will cease to own cars — and the distribution of these outcomes will follow the distribution of income and geography. Higher-income households will absorb the cost increase and continue driving. Lower-income households, particularly

in rural areas, will be priced out of car ownership. The reduction in vehicle kilometres will be achieved disproportionately through the impoverishment of those least able to adapt, in areas least served by alternatives.

The policy makes no distinction between these two outcomes. A household that drives less because it has chosen to cycle or use public transport, and a household that drives less because it can no longer afford fuel, both register identically in ETS2's emission reduction metrics. Voluntary reduction and poverty-induced reduction are recorded as the same success. The policy has no mechanism — and no apparent interest — in distinguishing between them.

Price is not the only tool available. Cycling lanes are being installed — and continue to spread to more locations — where residents previously parked. Footpaths are being widened, removing the ability to stop, pull in, or park outside your own home or business — without consultation, compensation, or recourse. Owners of properties that had on-street parking available have no remedy when it disappears overnight. Their property is worth less. The state acknowledges no connection. Each measure is presented as routine infrastructure improvement. The cumulative effect — making car ownership progressively more frustrating, costly, and ultimately untenable — is entirely consistent with the policy's direction, and the silence about that connection is itself part of the approach.

A pattern is emerging that is worth naming explicitly. The problem — congestion, parking shortages — is substantially manufactured or exacerbated by the very infrastructure decisions described above. The state then acts as though it has nothing to do with it, while implying the solution: too many cars in limited space, therefore people should logically conclude they ought to give them up. The official language is carefully chosen. 'Explicit goal is to address congestion by removing informal parking and set-down behaviour.' 'Create a pedestrian-focused streetscape.' In plain terms: what locals were doing — pulling in, dropping children, parking briefly — was identified as a problem to be removed by design. The predictable chaos that follows is not an oversight. It is the mechanism working as intended. The problem is created, its creators disclaim responsibility, and the solution — give up your car — is implied rather than stated, for now. These are distinct policy instruments in distinct domains — planning, transport, energy. They are examined together here because their combined effect on the same population, moving in the same direction, is relevant to any honest assessment of what is being asked of that population. That is analysis of interaction, not conflation of intent.

These observations are not inferences, and Cork serves as a documented example. The Cork Metropolitan Area Transport Strategy 2040 (CMATS), published by the National Transport Authority, states these objectives explicitly: the deliberate downgrading of national routes to prioritise cycling over car traffic, the allocation of only one third of new road cross-sections to car use, a planned congestion charge, and the removal of what it calls 'informal parking and set-down behaviour' as a design objective. An entire chapter is dedicated to what the document calls Behavioural Change Programmes — described as 'a highly personalised approach aimed at engaging a group of people, making them think about their travel choices.' The document states its objective as the mitigation of 'the need for car use and car ownership' — not its management, but its mitigation. Car restraint applies, it notes, not only where public transport exists but where it is 'planned to be served' — the restraint precedes the alternative. The congestions are manufactured by the reallocation of road space away from cars and then cited as the justification for further reallocation. Roads are narrowed in the name of safety under the term 'traffic calming' — a measure that increases the risk of incidents by reducing clearance, restricting visibility, and creating the conditions for the accidents it claims to prevent. The people inconvenienced and endangered by these interventions are the same people whose taxes fund them. Calling this a price signal would be generous. It is gaslighting at municipal scale, documented in an official strategy.

Halving Car Journeys Assessment

Neither interpretation of the halving target is compatible with the current realities of rural Irish life without infrastructure that cannot be delivered within the policy's timeframe. The policy does not acknowledge this — it states the target and assumes the conditions for its achievement will materialise. What this study additionally establishes is that the conditions for car ownership are being deliberately degraded through parallel planning instruments operating in documented coordination: road capacity reduced, parking removed, and congestions manufactured through traffic management decisions and then cited as justification for further restriction. The Cork Metropolitan Area Transport Strategy 2040, published by the National Transport Authority, documents these objectives explicitly.

ETS2 and this kind of traffic management are levers to each other — one makes driving unaffordable, the other makes it unbearable, and together they close off the option from both ends while neither acknowledges the other's existence or claims responsibility for the combined outcome. The people being conditioned out of car ownership are the same people whose taxes are funding both instruments of their own coercion.

PART 6 — BER RATINGS, ACTUAL ENERGY PERFORMANCE, THE INTEGRITY OF THE POLICY'S EVIDENCE BASE, AND ITS INTERFERENCE WITH HOUSE PRICES

BER ratings are governed by the Energy Performance of Buildings Directive (EPBD, EU/2024/1275), not by ETS2 directly. Like the halving of car journeys, BER is not written into ETS2's text. Like the halving of car journeys, it is inextricably part of the same policy toolbox. The European Commission's own documentation states explicitly that ETS2 is designed to provide a market incentive for investments in building renovations, while the EPBD simultaneously mandates the renovation standards those incentives are intended to drive. The Commission describes the two instruments as deliberately coordinated: ETS2 raises the cost of fossil fuel heating; EPBD defines what must replace it. They are two halves of the same architecture. Their examination together in this document reflects that documented coordination — not a conflation of unrelated policy domains. This section analyses how the buildings half of that architecture operates in practice — specifically whether the assessment methodology on which it rests is fit for the purpose it is being made to serve, and what its consequences are for Irish homeowners, buyers, sellers, landlords, and tenants. It should not need to be said that no analysis of this kind should be necessary — that a state with any claim to decency would not interfere with citizens' homes, their heating choices, and the value of their properties to this extent. That it does, and that it has made doing so a matter of law, does not make it right. This section is necessarily more extensive than others in this study because the BER methodology and its implications touch every category of Irish household — rural and urban, owner-occupier and tenant, elderly and young, low-income and comfortable — and the evidence base on which the policy's entire buildings intervention rests deserves more scrutiny than any other single element of this policy architecture.

6.1 How BER Assessments Work

BER assessments in Ireland, administered by SEAI, use a standardised theoretical energy model — based on construction type, insulation levels, heating system, windows, and presence of particular features — to calculate a projected annual energy consumption figure expressed in kWh per square metre per year. The rating does not measure actual energy consumption. It models what a home of that construction type is theoretically expected to consume under standardised occupancy and usage assumptions.

The methodology is designed for comparability across the housing stock — not accuracy for any individual home. As a result, homes that are in practice efficiently managed, well-maintained, or used in ways that differ from the standardised assumptions will receive ratings that may bear little relationship to their actual measured energy use.

6.2 The Systematic Penalisation of Traditional Features

The BER methodology explicitly penalises certain features that are common in older Irish housing stock and that are embedded in Irish rural and cultural life:

- Oil-fired heating systems are assessed at lower efficiency ratings than heat pump systems, irrespective of actual fuel use or the skill with which the system is managed.
- Fireplaces and solid fuel stoves — features of enormous cultural, practical and resilience significance in Irish homes — reduce a property's BER rating simply by their presence, regardless of how infrequently or efficiently they are used.
- The absence of SEAI-recommended improvements such as heat pumps, attic insulation to specification, or triple-glazed windows reduces the theoretical rating regardless of measured performance.

In effect, the BER system does not ask: how much energy does this house actually use? It asks: does this house have the features SEAI recommends? These are fundamentally different questions, and conflating them produces assessments that misrepresent actual performance in both directions — overrating homes with approved technologies that may be poorly used, and underrating homes with traditional features that may be efficiently managed.

6.3 A Documented Case: Theoretical D1 Rating vs Actual A2-Equivalent Performance

A verified and documented case brought to the attention of this study provides concrete illustration of the gap between BER theoretical assessment and actual measured energy performance. The property in question is an 18-year-old Irish home. On mortgage renewal, the existing BER certificate came to light, confirming the property is rated D1 — implying theoretical annual energy consumption of approximately 225-260 kWh per square metre per year. This classification would, under ETS2's supporting policy framework, identify the property as a candidate for mandatory or strongly incentivised retrofit intervention.

However, the homeowners obtained detailed half-hourly electricity consumption data from their energy supplier covering a full 12-month period (March 2023 to February 2024). The measured actual energy consumption was 34 kWh per square metre per year — approximately seven times lower than the BER theoretical figure, and equivalent to an A2 rating under SEAI's own classification scale. The property, by actual measured performance, is already among the most energy-efficient category of Irish homes.

When SEAI was contacted regarding this discrepancy, no response was received. When a BER assessor was consulted, the assessor confirmed that there is no precise formula for BER calculation and confirmed explicitly that features such as fireplaces and oil heating systems lower a property's rating regardless of actual energy use.

This is not a marginal or borderline case. A sevenfold discrepancy between theoretical and actual consumption — with the theoretical figure placing the home in a category requiring intervention, and the measured figure placing it among the best-performing homes in the country — represents a fundamental failure of the assessment methodology to capture reality.

It should also be noted that the source of the actual consumption data — half-hourly electricity usage records provided by the energy supplier, covering every half-hour of every day across a full twelve-month period — constitutes conclusive proof that the property was continuously and fully occupied throughout the year. This eliminates the most common counter-argument to low consumption figures: that the property was unoccupied, rarely used, or occupied only seasonally. The data does not suggest or estimate low consumption. It records it, in granular and irrefutable detail, across a complete year of continuous habitation. The discrepancy between this record and the theoretical BER assessment cannot be explained by occupancy patterns. It can only be explained by the methodology.

> *The implications of this scale change for existing rental minimum standards legislation — which references subcategories that will cease to exist from 24 May 2026 — are examined in section 6.5.*
>
> *From 24 May 2026, the BER rating scale will be simplified from 15 subcategories to 8 single-letter grades — A through G. The D1 and A2 subcategory designations referenced above will no longer appear on newly issued certificates, though all existing certificates remain valid for 10 years from their date of issue. Under the new simplified scale, D will cover a wider consumption range than D1 alone — potentially implying higher theoretical consumption than the current D1 designation. The performance discrepancy documented in this case may therefore be wider under the new scale than the sevenfold gap currently recorded.*

6.4 The Likely Scale of Systematic Misrating

No national comparative survey exists that measures actual energy consumption against BER theoretical ratings across the Irish housing stock. This absence is itself a significant policy failure: a system being used to

justify tens of billions of euros in mandatory and incentivised retrofit investment has never been validated against measured real-world performance at national scale.

The structural incentives for systematic underrating are clear and consistent. Any home with a fireplace, oil boiler, or solid fuel stove — features that are pervasive in rural Irish housing — will receive a lower BER rating than a structurally identical home without them, regardless of actual energy use. Given that oil heating is present in approximately 700,000 Irish homes and open fireplaces are a standard feature of Irish domestic architecture across all housing eras, it is reasonable to conclude that a substantial proportion of the Irish housing stock is theoretically underrated relative to actual measured performance.

The documented case described above is consistent with this structural bias. It is not presented as a nationwide statistical claim — the data to make such a claim does not exist, which is precisely the problem. It is presented as a verified, confirmed instance of the gap the methodology is structurally capable of producing, and which the methodology's own designers have implicitly acknowledged by confirming that traditional features reduce ratings regardless of actual use.

Those who would dismiss the documented case as a single anecdote that proves nothing systemic will miss what it actually demonstrates — and more importantly, they will miss the significance of their own defence. The standard response is that BER is not designed to measure actual consumption; it measures theoretical performance based on building characteristics. That admission is not a defence of the methodology. It is the problem stated plainly. A tool that explicitly does not measure actual consumption has no legitimate basis for being used to impose financial penalties, mandatory retrofit obligations, restricted mortgage access, and rental prohibitions based on assumed consumption levels. These two positions are irreconcilable: we are not measuring actual consumption, and therefore this property must be retrofitted because of its assumed consumption. If theoretical assessment is the starting point, actual measurement must be the determining factor before any financial consequence is applied. The documented property consumed 34 kWh per square metre per year — A2 standard — continuously occupied, efficiently heated, across a full year of recorded measurement. Under an honest system, that data would override the theoretical assessment. Under the current system, it is treated as entirely irrelevant.

If SEAI's programme were to proceed to its logical endpoint and all 700,000 oil-heated homes were required to retrofit, at the current average cost of approximately €50,000 before grants — rising to €75,000 or more for older or larger properties, figures confirmed by SEAI's own scheme data from early 2025 — the total revenue generated for the retrofit industry would approach €35 billion. If even 5% of those homes are performing similarly to the documented case — consuming at or near A2 standard while theoretically rated D or below — that is 35,000 homes facing a combined unnecessary retrofit cost of €1.75 billion, imposed on properties already performing at the standard the retrofit is intended to achieve.

The Sustainable Energy Authority of Ireland administers this programme, certifies the assessors, designs the methodology, and distributes the grants. It has not collected — and has shown no interest in collecting — national comparison data measuring actual energy consumption against theoretical BER ratings. The incentive to avoid collecting this data is not difficult to identify. That data would reveal the gap between the methodology's assumptions and reality, and in doing so would call into question the entire programme the organisation exists to deliver. SEAI and the broader retrofit industry have a vested interest in the perpetuation of a system based on theoretical models rather than actual measurement — because actual measurement might show that a significant portion of the €35 billion is unnecessary. Thirty-five billion euros is a sum large enough to skew institutional priorities, distort evidence, and ensure that the questions which would undermine it are never seriously asked. An organisation that prefers its own unvalidated models to actual measured energy consumption, while extracting tens of billions from the very taxpayers who fund its existence, has no credible claim to be a guardian of sustainability. It has every incentive to be a guardian of the assumptions on which its own survival depends.

6.5 The Policy Integrity Requirement

This concern carries direct implications for the legitimacy of ETS2's supporting buildings policy in Ireland. ETS2 and the parallel Energy Performance of Buildings Directive framework are being used to justify:

- Mandatory retrofit obligations, escalating over time, based on BER ratings.
- Denial or restriction of mortgage lending on properties below certain BER thresholds.
- Financial penalties and loss of property value for homes with low — and falsely low — BER ratings alike.
- Allocation of Social Climate Fund resources to retrofit programmes directed at BER-rated poor performers.

If BER ratings do not accurately reflect actual energy performance — and the documented evidence, the methodology's own design principles, and the confirmed assessor acknowledgement all suggest they frequently do not — then the entire evidential basis for these policy interventions is compromised. Homes are being compelled or financially penalised into expensive, disruptive interventions they may not need, on the basis of a theoretical model that has never been validated against measured reality at scale.

Critically, this is not a future risk. The integration of BER ratings into mortgage lending is already operational. From 1 February 2025, AIB requires a valid BER certificate before releasing mortgage funds on any property. Bank of Ireland prohibits lending entirely against buy-to-let properties rated F or G unless the borrower commits to upgrading. Every major Irish lender now charges a higher mortgage rate for properties below the B3 threshold — typically 0.10% to 0.30% more than the green rate, which on a €300,000 mortgage over 30 years amounts to between €10,000 and €19,000 in additional interest paid over the life of the loan. Property value interference is already measurable and significant: analysis of Dublin property transactions found that homes rated B or higher command valuations on average 26.6% higher than lower-rated equivalents — on a €500,000 property, a difference of €133,000. Your energy rating is already on your mortgage application and your property listing.

The BER Standards for Private Rented Accommodation Bill 2025 sets minimum rental thresholds of D2 by end of 2026, C1 by end of 2028, and B2 by end of 2030. These standards were set against a rating scale that will cease to exist in its current form from 24 May 2026, when all subcategories are removed and replaced by single letter grades A through G. The thresholds of D2 and C1 — subcategory distinctions that will no longer appear on any BER certificate issued after that date — will require legislative clarification before they can be enforced. That the state is simultaneously mandating compliance with subcategory standards and abolishing the subcategories against which compliance is to be measured captures, in one procedural absurdity, what regulatory frameworks look like when the objective is enforcement rather than clarity.

The practical consequence for a property such as the documented case deserves to be stated in plain terms. If that property were put on the market today, cash buyers could purchase it freely. Mortgage buyers would face a higher interest rate from every major lender. Under the proposed rental minimum standards, the property could not be legally let after end of 2026 without retrofit — despite already performing at A2 standard. And if lender criteria tighten further, the pool of eligible mortgage buyers will continue to shrink until the property can only be sold at a discount reflecting the cost of a retrofit its actual performance demonstrates is unnecessary.

The owner of this property has two options: submit to a retrofit they do not need, at a cost that current SEAI data places at approximately €50,000 on average before grants, to correct a rating that does not reflect their home's actual performance — or retain their home as it is and watch the state and the financial system progressively undermine its value and restrict its saleability. Neither of these options should be possible, let alone legal, in a state with any claim to decency. That is not a market outcome. It is a policy-engineered one. The owner did nothing wrong. Their only offence is refusing to submit to an ideology — and living efficiently in a home that the methodology was not designed to measure honestly.

It should also be noted how the state's role in this outcome is purposely obscured. The state designed the lending requirements, mandated the rating system, and constructed the entire policy framework that produced this result — then delivered the consequence through private lenders applying a methodology the state created, maintaining a studied distance from the homeowner it has harmed. The homeowner is told the market has spoken. The state declines to acknowledge that it pulled every lever that produced the deliberate, institutionally engineered devaluation of every home whose owner refused to submit — or simply wishes to keep their fireplace.

UNADDRESSED REALITY

Before any further policy proceeds on the basis of BER ratings as justification for mandatory retrofit, financial penalty, or public fund allocation, an independent national audit comparing theoretical BER assessments against actual measured energy consumption across a representative sample of the Irish housing stock is a basic prerequisite of policy integrity. Without it, the Irish state is potentially compelling hundreds of thousands of households to undertake costly and unnecessary interventions justified by a methodology confirmed to misrepresent their actual performance. This is not a minor technical concern. It is a question of whether the policy evidence base is valid. The situation this section describes bears the hallmarks of disproportionate interference with property rights. Under Article 43 of the Irish Constitution and Protocol 1 Article 1 of the European Convention on Human Rights, citizens are entitled to the peaceful enjoyment of their property. A policy that systematically engineers the devaluation of a class of property on the basis of an unvalidated methodology, with no mechanism for owners to demonstrate actual performance as a defence, has a credible basis for constitutional and human rights challenge. That challenge has not yet been brought. It should be. A further constitutional point deserves to be stated plainly. The principle that regulations should not apply retroactively is foundational to any system that claims the rule of law. A policy that imposes financial penalties, lending restrictions, and rental prohibitions on existing properties — homes that people already own and live in, purchased and maintained in good faith under a different regime — applies retrospective consequences without acknowledgement or remedy. No person sitting in their home on a winter evening, looking at a fireplace their family has used for generations, should be required to weigh whether keeping it makes their home unmortgageable. That this is now their situation — and that the state declines to acknowledge its role in producing it — is not a regulatory inconvenience. It is a failure of the state's basic obligation to those it governs.

One further dimension of this section's subject matter deserves explicit statement. The BER-linked mortgage restrictions, rental minimum standards, and property value interference described above are being implemented simultaneously with the worst housing crisis in the history of the Irish state. The restrictions reduce the pool of mortgageable and rentable properties at precisely the moment when supply is most critically constrained. The state that created the conditions for this crisis — through decades of planning dysfunction that over-regulated what the market could have resolved while simultaneously failing to manage the pace of demand growth, including through uncapped inflows that placed acute and foreseeable pressure on an already constrained housing stock — is now adding a further layer of restriction to the same market it failed, in the name of energy standards built on a methodology it has never validated.

In the same period, the Department of Justice considered legislation that would curtail the public's ability to object to large accommodation centres for asylum seekers — a legal challenge having successfully stalled a proposed 1,000-person centre in Athlone in 2024. The state that demands planning compliance from homeowners and landlords, and imposes energy rating restrictions on the properties they own, was simultaneously seeking to legislate its own immunity from the objection process it requires of everyone else.

The pattern that connects these two situations — and the one described in section 5.4 — is consistent. A problem is created or substantially worsened by state action or inaction. The state then disclaims responsibility. A solution is imposed that compounds the original problem, affecting those least able to resist it. Objections are managed, marginalised, or legislated away. The language used — improving housing quality, creating pedestrian-focused streetscapes, ensuring a fair green transition — is invariably the language of improvement and necessity. The underlying structure, in each case, is the exercise of administrative power over people who have no effective means of refusing it. These patterns, taken together, warrant a critical study of their own.

PART 7 — IMPACT ON IRISH AGRICULTURE

7.1 The Fundamental Asymmetry

Agriculture accounts for approximately 33% of Ireland's total greenhouse gas emissions — the highest proportion in the EU. This reflects Ireland's large export-oriented agri-food sector and relatively little heavy industry. Irish agricultural emissions are dominated by methane from enteric fermentation and nitrous oxide from fertiliser use. Neither is targeted by ETS2. ETS2 targets only fossil fuel combustion: diesel in farm machinery and vehicles, and heating fuels in farm buildings. The exclusion of biological agricultural emissions from ETS2 scope is not an oversight — it reflects the technical difficulty of pricing methane and nitrous oxide through a market mechanism. Whether the underlying proposition — that the digestive processes of livestock constitute a meaningful and addressable contribution to global climate change warranting legislative intervention — is one that deserves more scrutiny than it has received, this study leaves to the reader.

7.2 Direct Negative Consequences

- Higher machinery operating costs: All diesel consumed by tractors, harvesters, slurry tankers and other farm equipment is within ETS2 scope. Additional annual operating costs of EUR 1,150-5,000+ per farm are realistic at mid-to-upper carbon price ranges. These costs are not recoverable from the market.
- Higher heating costs for farm buildings: Grain driers, livestock housing, milking parlour systems, and farm offices heated by oil or gas fall within ETS2 scope. These are not discretionary — they are required for food safety and animal welfare standards.
- No ability to pass costs to consumers: Farmers operate in global commodity markets. Additional carbon costs are absorbed as reduced farm income.
- Disproportionate impact on smaller and marginal farms: KPMG Ireland (2021) found the bottom third of beef farms already had negative net margins including overhead costs. ETS2 adds cost pressure to already financially fragile holdings.
- Higher input costs through supply chains: Feed, fertiliser, veterinary supplies and all farm inputs transported by road carry higher distribution costs.
- Competitive disadvantage against non-EU producers: Irish food producers face ETS2 costs that competitors in Brazil, New Zealand, Australia and the US do not. The Carbon Border Adjustment Mechanism does not currently cover food products.
- Pressure toward herd reduction: Ireland's Climate Action Plan already requires a 22-30% reduction in agricultural emissions by 2030, implying significant livestock reductions. ETS2 adds financial pressure to the same sector simultaneously being asked to reduce output.
- Land use change: As farming becomes less financially viable for marginal holdings, pressure grows to convert agricultural land to forestry, rewilding, or energy production — fundamental changes to the agricultural character of rural Ireland.
- Food sovereignty risk: Significant contraction of Irish agricultural output increases dependence on food imports and exposure to global supply chain disruptions.
- Carbon leakage risk: If Irish production is replaced by less carbon-efficient production elsewhere, the global climate impact is neutral or negative while Irish livelihoods are destroyed.

> **Agricultural Assessment**
>
> ETS2 imposes real financial costs on Irish agriculture in a sector already under severe pressure from parallel climate regulations, commodity market exposure, and environmental compliance

requirements. The policy's asymmetry — taxing fossil fuel use while leaving the dominant methane and nitrous oxide emissions to separate frameworks — means farmers bear ETS2 costs without the primary mechanism for reducing their climate impact being addressed by the same instrument.

PART 8 — IMPACT ON IRISH FISHERIES

The Irish fishing industry is one of the most fuel-intensive sectors of the Irish economy and one of the least capable of transitioning away from fossil fuels within any foreseeable timeframe. It operates in coastal communities that are already among the most geographically isolated and economically fragile in Ireland, and it has no representation within ETS2's Social Climate Fund framework. It is, in effect, a sector that will bear direct ETS2 costs while being structurally invisible to its mitigation architecture.

8.1 Scale and Economic Significance

Annual value to Irish economy	EUR 1.22 billion (BIM, 2019 figures)
Direct and indirect employment	Over 16,000 people
Registered fishing vessels	Over 2,000
Seafood processing businesses	Over 160
Aquaculture production units	278
Total seafood value landed into Irish ports	EUR 424 million (2019, BIM)
Key landing ports	Killybegs (Co. Donegal), Castletownbere (Co. Cork)
Geographic concentration	West and northwest coastal communities — among Ireland's most rural and isolated

8.2 Fuel Dependency and ETS2 Exposure

Fishing vessels are among the most diesel-intensive operations in any economy. Offshore and pelagic vessels — the white fish and prawn fleets that spend the most time at sea — consume very large quantities of marked gas oil (MGO). There is no electrification pathway for ocean-going fishing vessels within any near-term or mid-term timeframe. Battery technology does not scale to the energy requirements of offshore fishing. There is no alternative fuel available at commercial scale. The fishing sector cannot decarbonise by switching technology. It can only decarbonise by fishing less — which means earning less.

The current carbon charge on marked gas oil is already EUR 76 per tonne of CO2 in 2024 — approximately EUR 0.17 per litre. ETS2 will either add to this charge or replace the national carbon tax, depending on whether Ireland's derogation is approved. Either way, the direction is permanently upward.

The April 2026 price spike described below was caused by geopolitical instability in the Middle East — not by ETS2, which has not yet taken effect. It is included here because it serves as a documented real-world template for what ETS2 is designed to make permanent by legislative construction rather than market accident. The severity of this exposure became dramatically visible in April 2026, when marked gas oil (MGO) — the off-road diesel used by fishing vessels and farm machinery, chemically similar to road diesel but dyed green and taxed at a lower rate, legally restricted to non-road use — nearly doubled in price from EUR 0.97 to EUR 1.80 per litre due to geopolitical instability in the Middle East. This is confirmed by the official Irish government press release of 12 April 2026 and multiple independent sources. The Irish government was compelled to announce an emergency EUR 100 million fuel subsidy scheme, with up to EUR 5 million per month specifically directed at fishers, following nationwide protests and industry warnings that vessels would be cheaper to tie up at the quayside than send to sea. The Irish South and East Fish Producers Organisation

warned explicitly: 'The industry urgently needs help or it is just going to have to stop fishing.' Around one third of the offshore fleet were reportedly on the verge of tying up their vessels.

ETS2 adds a permanent, escalating carbon cost on top of whatever market price applies. The April 2026 crisis was caused by temporary geopolitical factors. ETS2 creates a structurally equivalent cost pressure that is permanent, designed, and non-reversible.

8.3 The Price Taker Problem

Like farmers, fishers are price takers. They sell into global commodity markets at prices set by international supply and demand. They cannot pass carbon cost increases to their customers — they receive what the market offers for their catch, regardless of what it cost to land it. Industry representatives confirmed this explicitly during the April 2026 crisis: 'Fishermen and women cannot pass the higher cost of diesel onto any of their customers, and instead have to accept what the market is prepared to pay for their fish.'

This means that every increase in fuel costs under ETS2 is absorbed entirely as a reduction in fishing income. For vessels already operating on thin margins — which describes the majority of the Irish fleet, particularly inshore and white fish vessels — this is not an inconvenience but a direct threat to viability.

8.4 Invisibility in ETS2's Mitigation Framework

The Social Climate Fund, as designed, supports vulnerable households and micro-enterprises. Fishing enterprises do not fit neatly into either category. Commercial fishing operations are businesses, not households. Many exceed the micro-enterprise threshold. The SCF guidance does not include any specific provision for the fishing sector. Ireland's Social Climate Plan — which had not been publicly consulted as of March 2025 — has no confirmed mechanism for directing SCF resources to fishing communities.

There is no EU-level fishing sector equivalent of the Social Climate Fund. The European Maritime, Fisheries and Aquaculture Fund (EMFAF) exists separately but is not designed or resourced to compensate for permanent operating cost increases of the kind ETS2 imposes. The EU Fisheries Committee was examining the fuel cost crisis impact as recently as April 2026, with MEPs raising questions about whether long-term structural support could be embedded in the 2028-2034 financial framework — but no commitment exists.

8.5 Negative Consequences for Irish Fisheries

- Direct operating cost increases: Permanent escalating carbon cost on all diesel consumed at sea, with no ability to pass costs forward and no electrification alternative.
- Fleet viability: Vessels operating at thin margins — already demonstrated to be the majority during the April 2026 fuel crisis — face accelerating financial pressure that will make fishing economically unviable for a growing proportion of the fleet.
- Fleet reduction: Economic pressure will accelerate the decommissioning of vessels, reducing Ireland's fishing capacity and the communities that depend on it.
- Coastal community collapse: Killybegs, Castletownbere, and other fishing ports are not merely commercial centres — they are the economic foundations of entire coastal communities. Loss of fishing viability removes the primary economic base of communities with no realistic alternative industry.
- Competitive disadvantage: Irish fishing vessels face ETS2 costs that competitors from non-EU countries fishing the same waters — including Norwegian, Faroese and Icelandic vessels in some contexts — do not face. This creates a competitive asymmetry in shared fishing grounds.

- Aquaculture exposure: The 278 aquaculture production units also face higher operating costs through fuel for boats, processing energy, and distribution — while similarly unable to pass costs to international markets.
- Food security dimension: Ireland's coastal waters are among the most productive fishing grounds in Europe. A contraction of the Irish fishing fleet reduces the country's capacity to harvest its own marine resources — a food security consideration not addressed anywhere in ETS2's framework.
- No transitional pathway: Unlike road transport, where EVs represent a plausible eventual alternative, or buildings, where heat pumps offer a substitution route, fishing has no viable decarbonisation technology within any foreseeable timeframe. The sector faces permanent cost escalation with no exit route.

Fisheries Assessment

The Irish fishing industry faces the same fundamental problem as Irish agriculture under ETS2: it is a price-taking sector with no ability to pass carbon costs forward, no viable technological alternative to fossil fuel, and no adequate representation within the policy's mitigation framework. The difference is that fishing communities are even more geographically isolated, even more dependent on a single economic activity, and even less visible in the policy architecture designed to manage the transition's social impacts. The April 2026 emergency fuel subsidy was a reactive measure to a temporary price spike. ETS2 creates a permanent version of the same pressure.

PART 9 — GOODS AND MATERIAL TRANSPORT: FEASIBILITY OF DECARBONISATION

Road freight — the movement of all goods and materials by heavy goods vehicles, vans, and distribution lorries — is entirely diesel-dependent and has no viable electrification pathway within ETS2's operational timeframe. Electric HGVs exist but carry a purchase cost two to three times that of diesel equivalents, with inferior range, reduced payload, and no commercial-scale charging infrastructure in Ireland. The carbon price signal ETS2 applies to freight diesel will not accelerate a technological transition that the technology itself cannot yet support at commercial scale. It will instead raise the operating cost of moving every physical good in the Irish economy — costs that will pass directly through to the price of food, building materials, medicines, and consumer goods, with no mechanism to prevent them doing so.

In Ireland, this effect is amplified beyond what most EU Member States face. The island has no rail freight network capable of substituting for road distribution, and all imported goods must arrive by sea before being distributed entirely by road. ETS2's carbon cost therefore applies to the final distribution leg of one hundred percent of Ireland's imported goods, with no alternative channel and no relief.

The deeper question is whether the emission reductions ETS2 claims to deliver in freight are real. If operators cannot electrify and the carbon price suppresses freight activity rather than substituting it with clean technology, the reductions recorded consist not of genuine decarbonisation but of economic contraction measured in emission units. A country that moves less food and builds fewer houses because road transport has been made more expensive has not decarbonised its logistics sector. It has damaged its economy while the sector's fossil fuel dependency remains structurally unchanged. The policy contains no mechanism for distinguishing between these two outcomes.

PART 10 — IMPACT ON RECREATIONAL TRAVELLING: DOMESTIC AND INTERNATIONAL

10.1 Domestic Recreational Travel

Ireland's domestic tourism and recreational travel is overwhelmingly car-based. The country's most visited natural and scenic areas — the Wild Atlantic Way, the Ring of Kerry, Connemara, Donegal, the Burren — are rural, dispersed, and served by minimal public transport. Visiting them requires a car.

- Higher fuel costs directly increase the marginal cost of every domestic recreational journey.
- Rural tourism enterprises — bed and breakfasts, activity providers, craft businesses, rural pubs — depend on visitors arriving by car. Reduced car travel reduces their customer base.
- The transition period — when fuel costs are high, EV costs are also high, and charging infrastructure is insufficient for rural touring — creates a prolonged period of constrained domestic leisure travel.
- Domestic road-trip culture, car camping, and touring — significant elements of Irish domestic recreation — are directly affected in ways urban recreational activities are not.

10.2 International Recreational Travel and the SAF Trajectory

Ireland's island geography means international travel requires aviation or ferry. For an Irish person, flying is not a preference — it is the only practical means of international travel for most destinations. This structural reality makes Ireland uniquely exposed to any policy that increases the cost of aviation.

ETS1 requires 100% auctioning of aviation allowances from 2026. In parallel, the EU's ReFuelEU Aviation regulation mandates a rising minimum share of Sustainable Aviation Fuel in all jet fuel: 2% from 2025, rising to 70% by 2050, with 35% of that required to be synthetic e-fuel. SAF currently costs 3 to 10 times more than conventional jet fuel; synthetic e-kerosene was 13 times more expensive as of late 2025. Even at the most optimistic projection of cost reductions by 2050, ticket prices on fuel costs alone would increase by 20–25% at full SAF penetration — and this assumes production targets that would require more renewable electricity than the world currently generates. For Ireland, with no land-based international travel alternative and approximately 3,678 flights per 1,000 population annually among the highest rates in Europe, this is not an abstract figure.

There is a broader point that deserves explicit statement beyond the cost analysis above: the spirit of ETS2 and the wider Green Deal is the reduction of carbon footprints by all available means. Within that framework, all non-essential travel is structurally inconsistent with the policy's objectives, regardless of what fuel powers the aircraft. The Avoid-Shift-Improve framework classifies demand reduction as the primary lever. Applied to aviation, this implies that intervention to reduce air travel demand — whether through pricing, taxation, or direct restriction — is not only consistent with the policy's logic but arguably required by it. For continental Europeans, reduced air travel can be substituted by rail. For Irish people, it cannot. Any demand-reduction policy applied to aviation falls on Ireland's population with a severity that has no equivalent for most EU citizens, and this asymmetry is nowhere acknowledged in the policy framework.

The specific categories of Irish life most exposed to this compound pressure — rising costs combined with the longer-term prospect of demand-reduction intervention — are worth identifying explicitly:

- Diaspora visits: Rising ticket costs disproportionately affect families with diaspora connections — a very large proportion of the Irish population — for whom international travel is not recreational but familial and cultural.

- Tourism: An ESRI analysis found that aviation demand in Ireland is relatively inelastic due to the lack of alternatives. Price increases reduce tourist spending more than arrivals, producing a net negative economic effect.
- Business connectivity: Ireland's foreign direct investment economy and export-dependent agri-food sector both depend on air connectivity. Rising aviation costs affect Ireland's competitiveness as a location for investment and as a base for export-oriented business.

There is a broader point worth stating explicitly. The spirit of a policy designed to make travel progressively more expensive does not distinguish between necessary and recreational journeys. If the policy's authors had their way, all recreational travel, including domestic tourism, would be gradually reframed as something to be frowned upon, a discretionary indulgence inconsistent with a sustainable lifestyle. That framing has not yet been stated openly. It is the logical destination of the policy's direction.

Recreational Travel Assessment

Ireland's island geography means its citizens face higher incremental costs from carbon pricing on both domestic and international travel than most EU Member States, with fewer alternatives available. The SAF mandate trajectory will add materially to ticket prices through the 2030s and beyond. More fundamentally, the policy's own logic of demand reduction points toward further intervention in aviation — an intervention that falls disproportionately and unavoidably on an island population for whom there is no substitute.

PART 11 — ECONOMIC, SOCIAL AND HEALTH IMPACTS BY DEMOGRAPHIC

11.1 Farmers and Agricultural Workers

Irish agriculture accounts for approximately 33% of national GHG emissions — the highest proportion in the EU. Yet ETS2 covers only the transport and heating fuel costs of farming, not the dominant methane and nitrous oxide emissions.

- Direct fuel cost increases: Irish agriculture uses approximately 350 million litres of agri diesel per year nationally (Lambes Oil / industry data). A working dairy or livestock farm typically consumes 10,000-15,000 litres of diesel annually; a tillage operation of 150 hectares uses that figure on grain drying alone (Teagasc). At an ETS2 carbon price of EUR 100/tonne, the additional annual operating cost on diesel alone is EUR 2,300-3,450 for a mid-scale farm, and EUR 5,750-11,500 or more for larger operations. Agricultural contractors — who provide silage, harvesting and spraying services and who receive no carbon tax deduction unlike farmers — face the highest per-litre exposure with no relief mechanism whatsoever.
- No pass-through ability: Farmers are price takers in global commodity markets. They cannot pass carbon costs to customers. The cost is absorbed entirely as reduced farm income.
- Double exposure: Farmers live on their farms in rural areas, facing both farm operating cost increases and personal transport and heating cost increases simultaneously.
- Marginal farm viability: KPMG research (2021, for the Irish Farmers Journal) found the bottom third of beef farms by economic performance already has negative net margins even with CAP income support. ETS2 adds cost pressure to already financially fragile operations.
- Carbon leakage: If Irish agricultural production contracts, it may be replaced by production in countries with less stringent environmental standards — producing no global climate benefit while destroying Irish agricultural livelihoods.
- Asymmetric burden: Farmers bear ETS2 costs for peripheral fossil fuel use while their dominant emissions source (methane from cattle) is regulated separately.

> **Agricultural Sector Assessment**
>
> Severe. Financially exposed across multiple channels with no pass-through ability. Ireland's unique agricultural profile — highest agri-share of national emissions in the EU — means Ireland faces more severe agricultural impact than virtually any other Member State.

11.2 Construction Workers

- Travel to dispersed sites across wide geographic areas in vans and trucks. Modal shift is practically impossible.
- Higher transport costs reduce disposable income and raise project costs, potentially suppressing construction activity — including the housing Ireland urgently needs.
- Paradox: ETS2 simultaneously creates demand for building retrofit labour and raises the cost of workers reaching construction sites.

> **Construction Workers Assessment**
>
> High impact. Vehicle dependency is structural and cannot be mitigated by modal shift.

11.3 Road Transport and Haulage Workers

- Road haulage is entirely diesel-dependent and cannot electrify at commercial scale in any near-term timeframe. Electric HGVs remain significantly more expensive with inferior range and no adequate charging infrastructure in Ireland.
- Ireland's cross-border haulage faces potential regulatory asymmetries as EU and UK carbon pricing regimes evolve (an early-stage EU-UK ETS linking agreement was noted in 2025, timeline unclear).
- Higher haulage costs affect every downstream consumer and business in Ireland.

> **Haulage and Transport Workers Assessment**
>
> High to severe impact. No viable near-term decarbonisation pathway for heavy freight.

11.4 Hospitality and Tourism Workers

- Sector concentrated in rural, coastal and scenic areas with worst public transport and greatest car dependency.
- Workers face higher commuting costs with no alternatives. Businesses face higher energy and supply chain costs.
- High proportion of low-wage, part-time and seasonal workers with least capacity to absorb fuel cost increases.

> **Hospitality and Tourism Workers Assessment**
>
> High impact. Geographic concentration in rural areas with high car dependency.

11.5 Elderly Populations

- Fixed or pension incomes; older, inefficient housing stock predominantly oil-heated; older vehicles; prospect of becoming unable to drive.
- Loss of the ability to drive in rural Ireland is effectively loss of independent living. Community transport services provide only limited coverage. The car is the only means of access to medical services, shops, family and social contact for many rural elderly people.
- Disproportionately likely to live in the oldest housing — least amenable to heat pump installation without full retrofit — and least likely to have capital or capacity to manage a major retrofit.

> **Elderly Rural Population Assessment**
>
> Severe. Convergence of financial vulnerability, housing inefficiency, transport dependency, and health access risk.

11.6 Urban Residents

- Generally have access to public transport; shorter journey distances; lower direct ETS2 transport exposure.
- Renters in older gas or oil-heated housing face rising heating costs with no control over the heating system.
- More likely to receive SCF-funded public transport improvements, providing a meaningful offset.

Urban Residents Assessment

Moderate impact. Significantly lower than rural populations, with more readily available mitigation options.

11.7 Rural Residents (General)

As detailed throughout this study, rural residents face the full force of ETS2 across every dimension — transport, heating, goods costs — without access to most of the mitigation options the policy assumes. The compounding nature of this exposure is its most significant characteristic: it is not one additional cost but a simultaneous, sustained, multi-channel cost increase with no exit route that does not require capital and infrastructure currently unavailable.

Rural Residents Assessment

Severe impact across all sub-groups. The most severely affected demographic in Ireland under ETS2.

11.8 Long-Distance Commuters

- Commuters travelling 30km or more to work face the most direct and quantifiable cost impact from fuel price increases.
- In Ireland, where commuting distances are long and public transport outside five cities is inadequate, this is a large and politically significant group.
- Changing job or home location is not a short-term option. The price signal arrives before alternatives are available.

Commuters Assessment

High impact. Duration of exposure — costs arrive before alternatives exist — is the defining characteristic.

11.9 Low-Income Households

- Carbon pricing is inherently regressive: fuel as a proportion of income is higher for lower-income households. This is explicitly acknowledged in ETS2 policy documents.
- Mitigation (EV, heat pump, retrofit) requires capital that lower-income households typically do not have.
- As of March 2025, Ireland had issued no public consultation timeline for its Social Climate Plan, and the European Commission had already flagged several deficiencies in Ireland's draft National Energy and Climate Plan relevant to SCF implementation.

Low-Income Households Assessment

Severe. Regressive mechanism with mitigation dependent on effective national implementation not yet demonstrated.

11.10 People with Disabilities and Medical Dependencies

- Higher transport costs reduce ability to attend medical appointments.
- During Storm Eowyn (January 2025), an elderly man in County Mayo died in front of his family when medical equipment lost power. A GP practice in Galway reported disposing of vaccines due to power failure.
- In a fully electrified system, power outages eliminate backup options for medical equipment users who currently have fossil-fuel-powered fallbacks. This is addressed in detail in Part 9.

People with Disabilities Assessment

Severe, particularly in rural areas. Medical dependency on electricity creates unique vulnerability in a fully electrified system.

PART 12 — SECONDARY, TERTIARY AND FURTHER-ORDER IMPACTS

12.1 Secondary Impacts

- General consumer price inflation: Higher distribution costs for all road-transported goods pass through to every price in Ireland's economy.
- Higher food prices: Agricultural production and distribution costs rise and pass through to food prices, hitting low-income households hardest.
- Depreciation of petrol and diesel vehicles: As ETS2's endpoint becomes more certain, residual values of ICE vehicles decline, accelerating financial pressure on households that cannot afford to switch.
- Stranded oil heating infrastructure: Oil tanks, boilers, distribution networks, and the businesses servicing them become progressively less viable. Approximately 700,000 oil-heated Irish homes face gradual asset stranding.
- Grid demand surge: As EVs and heat pumps replace combustion vehicles and oil boilers, electricity demand rises sharply on an already constrained grid.
- Policy-dependent employment: ETS2 generates demand for BER assessors, retrofit coordinators, heat pump installers, carbon compliance officers, and Social Climate Plan administrators. These are not organic economic activities — they are professions that exist only because this policy exists, and whose livelihoods therefore depend on its continuation and expansion. Like the fossil fuel suppliers the policy is designed to phase out, this professional class is ultimately working toward the conditions that will reshape or eliminate the demand for their services — while in the meantime constituting an institutional interest in the policy's perpetuation regardless of its outcomes.

12.2 Tertiary Impacts

- Rural depopulation acceleration: Economic pressure on rural residents may accelerate pre-existing rural-to-urban migration, reducing rural population density and making rural public transport provision even less economically viable — a feedback loop.
- Agricultural consolidation: If smaller and marginal farms become financially unviable due to compounding cost pressures, land consolidation will accelerate, with significant implications for rural employment and community structure.
- Data centre competition for grid capacity: Data centres projected to consume 30-32% of Irish electricity by the early 2030s compete directly for capacity needed by EVs and heat pumps. The energy transition may be physically constrained by insufficient electricity supply.
- Insurance and mortgage market adjustments: Properties in areas with poor EV infrastructure, limited public transport, and oil heating may face higher insurance costs and reduced mortgage valuations as lenders and insurers price long-term compliance cost risk.
- Mental health impacts and suicide risk: Financial stress, social isolation, loss of livelihood, and forced change of life circumstances are well-established and documented risk factors for mental health deterioration. Ireland already carries a serious and persistent problem with suicide rates, particularly among rural men, farming communities, and young people in isolated areas — populations that are precisely those most exposed to ETS2's compounding pressures. The combination of escalating financial burdens with no exit route, loss of the ability to sustain an independent rural life, and the progressive removal of the practical means of self-sufficiency creates conditions that are not merely economically damaging but psychologically corrosive. A policy that accelerates these pressures without providing adequate alternatives or support structures will, with reasonable certainty, accelerate suicide rates in the communities most affected. This is not a speculative claim. It is the predictable

consequence of applying sustained, inescapable financial pressure to populations already identified as vulnerable.

12.3 Further-Order Impacts

- Social fragmentation: Communities in which some residents can afford the transition and others cannot will experience differential outcomes, intra-community inequality, and potential tension between those who have borne the costs and those who have not.
- Food security: If Irish agricultural output contracts significantly, Ireland becomes more dependent on food imports — increasing exposure to supply chain disruptions and price volatility.
- Demographic deterioration of rural communities: Accelerated outmigration of working-age adults leaves rural communities with a disproportionately elderly and economically vulnerable population at precisely the moment when major infrastructure transitions need to be managed.
- Carbon leakage in food production: Contraction of Irish agricultural production may be replaced by less carbon-efficient production elsewhere, producing no global climate benefit while destroying Irish livelihoods.
- Social cohesion under crisis conditions: A further-order risk that receives no attention in ETS2's documentation concerns the resilience of social cohesion under conditions of acute and prolonged stress. Ireland is a significantly more diverse society today than it was during previous national crises. In a crisis scenario — extended infrastructure failure, prolonged energy shortage, or the consequences of a major weather event in a fully electrified system — the capacity for spontaneous mutual aid depends heavily on shared cultural frameworks, mutual trust, and community solidarity. These are not guaranteed in all circumstances, and they cannot be assumed to function as they historically have when the social fabric of a community has been altered by rapid demographic change combined with the economic pressures this policy accelerates. This is not an argument about the value of diversity. It is an observation about crisis sociology: the conditions under which communities hold together under extreme stress, and whether the assumptions embedded in ETS2's resilience framework — which contains no resilience framework — reflect the society that will actually be navigating these scenarios.

PART 13 — ENERGY SUPPLY DISRUPTIONS: WHAT THE POLICY DOES AND DOES NOT ADDRESS

13.1 What the Policy Provides For

ETS2 contains two types of price-related disruption provisions: Market Stability Reserve mechanisms that release additional allowances if prices rise too rapidly, and an energy market emergency clause that can delay the system's operational start by one year if oil or gas wholesale prices are exceptionally high. These provisions are financial instruments responding to market signals. They have no relevance whatsoever to physical infrastructure failure.

13.2 Storm Eowyn (January 2025): The Benchmark Case

Storm Eowyn struck Ireland on 24 January 2025 — the most powerful storm ever recorded in Ireland, with gusts of 183km/h at Mace Head in Connemara. The storm's impact on Ireland's electricity infrastructure was the largest power outage event in the island's history.

Peak premises without power (Republic of Ireland)	768,000
Peak premises without power (Northern Ireland)	250,000+
Premises still without power at Day 7	74,000 (Republic)
Premises still without power at Day 12	18,000 (Republic)
Electricity poles requiring replacement	3,000
Cabling requiring replacement	900km
Deaths directly attributed	At least 2 confirmed; elderly man in Mayo died when medical equipment lost power
Vaccines destroyed (GP practice, Galway)	Reported as direct consequence of extended power loss
Estimated insured damage	Approximately EUR 200 million

13.3 What People Could Do During Eowyn — And Why It Mattered

During Storm Eowyn, people who still have access to petrol cars, oil boilers, solid fuel stoves, and open fires — access this policy is actively and persistently working to remove — were able to heat their homes, cook food, power medical equipment, reach shops, and assist their neighbours. That capacity for spontaneous mutual aid functioned precisely because diversity of energy options still exists.

It must be stated explicitly: the people who were most vulnerable during that outage were not those who had failed to modernise or engage with the energy transition. They were, in many cases, those who had already done what this policy demands of everyone — fully electrified their homes and transport — and discovered that when the grid fails, there is nothing left to fall back on. They were a living demonstration of the policy's intended endpoint, and of what it looks like when the infrastructure underpinning it fails.

The people who could still help were those who had not yet been compelled to give up the options this policy is designed to eliminate. They threw a lifeline — with their petrol cars, their oil boilers, their fireplaces — to those who had already let those options go. Remove those options from everyone and there is no lifeline left to throw.

13.4 What Would Happen in a Fully Electrified Ireland Under the Same Storm

- EV owners cannot move: All public charging infrastructure is offline. Home charging requires mains electricity. An EV with diminishing charge in a 14-day outage becomes stationary. Rural residents who have transitioned to EVs as the policy demands lose their mobility entirely.
- Heat pump homes lose heating: Heat pumps require mains electricity. A fully retrofit home with no oil boiler backup, no fireplace — many retrofits seal or remove chimneys — and no gas connection has no heating during a January outage.
- Induction cooking fails: Homes that have replaced gas or solid fuel with induction cookers lose all cooking capability.
- Medical equipment fails: People dependent on home oxygen concentrators, dialysis, nebulisers, or powered wheelchairs have no backup. In 2025, under the current mixed-fuel system, this already caused at least one death. In a fully electrified system, the at-risk population is larger and the fallback options have been removed by design.
- Petrol generators become unavailable: At ETS2's intended endpoint, petrol infrastructure has been decommissioned. The backup systems that made Eowyn survivable — petrol generators, oil boilers, open fires, petrol-powered cars — will either no longer exist or no longer be fuelled. The policy's endpoint requires the elimination of the very fallback systems that protected people during the 2025 event.

13.5 The Policy's Complete Silence — On This and All Similar Scenarios

ETS2 contains zero provisions addressing any scenario in which the electrified infrastructure it depends upon becomes unavailable. There is no emergency protocol for grid failure. There is no resilience standard for severe weather. There is no contingency framework for cyberattack, geopolitical disruption to electricity supply, equipment failure at grid scale, or any other cause of extended outage — foreseen or unforeseen. The policy does not acknowledge that such scenarios are possible, does not assess their human cost, and does not address what replaces the fossil fuel fallback systems it is designed to eliminate. This silence is not limited to weather events. It extends to the full range of scenarios — foreseeable and unforeseeable — in which a population that has been required, in most cases against its will and without its consent, to surrender its fossil fuel alternatives, finds itself without power. The policy offers no answer to the question of what happens then.

13.6 Diversity of Energy Sources as a Permanent Requirement

Resilience built on a single source of energy is not resilience. It is a single point of failure — and a source of gravely dangerous, entirely avoidable risk. Every domain of critical infrastructure — communications, water supply, transport, finance — maintains redundancy precisely because dependence on any single system creates a documented and repeating failure mode. When that system fails, everything fails with it. A fully electrified energy system with no backup does not represent a modern achievement. It represents the deliberate creation of a national single point of failure, the removal of every individual's capacity to function independently of it, and the concentration of an entire population's ability to heat, cook, move, and communicate into a single infrastructure that has already demonstrated, as recently as January 2025, that it cannot be guaranteed under severe weather conditions.

For this reason, the preservation of access to fossil fuel vehicles, oil and solid fuel heating systems, and open fireplaces must be treated not as a transitional accommodation but as a permanent structural requirement of any responsible energy policy. Open fireplaces in particular carry both deep cultural significance in Irish life and proven emergency value that no electrical system can replicate during a grid outage. Their penalisation in BER ratings, and their eventual elimination through retrofit mandates, removes a resilience asset of genuine and demonstrated importance — not only as a cherished element of Irish cultural life, but as practical capacity that the policy of electrification cannot replace and has not attempted to replace.

UNADDRESSED REALITY

ETS2 is designed to eliminate the fossil fuel fallback systems — petrol vehicles, oil boilers, gas cookers, open fires, diesel generators — that allowed rural Irish communities to survive the 14-day Eowyn outage with serious hardship rather than mass casualties. The policy contains no provision for what replaces these systems as emergency resilience mechanisms, no assessment of the worst-case human cost of an extended outage in a fully electrified system, and no standard for grid hardening adequate to this risk. This is not a speculative scenario. Storm Eowyn happened in January 2025, before ETS2 is even operational. A similar storm in a fully electrified Ireland — whenever that endpoint is reached — without adequate resilience measures, would be a humanitarian emergency of an entirely different order.

PART 14 — THE LEVEL OF COERCION REQUIRED

14.1 The Policy's Self-Description as Non-Coercive

ETS2 presents itself entirely as a market mechanism. No individual household or business is legally required to reduce fossil fuel consumption. People retain the choice to continue using fossil fuels; they simply pay more. In this framing, it is non-coercive.

14.2 The Structural Reality

This characterisation depends on the existence of genuine alternatives. Where alternatives exist — urban areas with public transport, affordable EVs, accessible charging, heat pump-suitable housing — the price signal functions as described: it shifts the economics while preserving freedom of choice.

Where genuine alternatives do not exist — which describes a large portion of rural Ireland's current reality — the price signal functions not as an incentive to change but as a penalty for being unable to change. This is coercive in effect, even if not in form. A person who has no practical alternative to driving their petrol car to work is not exercising free choice when they pay more for petrol; they are bearing a tax on a necessity with no exit route.

14.3 Parallel Regulatory Coercion

ETS2 does not operate alone. The broader regulatory ecosystem includes:

- The EU regulation ending sale of new petrol and diesel passenger cars from 2035 — legally mandatory.
- Building energy performance standards progressively requiring higher efficiency thresholds — mandatory in new buildings, expanding to retrofit.
- Ireland's legally binding sectoral carbon budgets under the Climate Action and Low Carbon Development Act 2021.
- Traffic management policy — documented in official planning strategy — simultaneously reducing road capacity, removing parking, and manufacturing congestions, making driving progressively more difficult regardless of fuel type. This is examined in detail in Part 5.

The combined effect of ETS2's price signal and these mandatory requirements is that fossil fuel use in transport and buildings is not merely made more expensive — it is systematically phased out through a combination of market mechanisms and legal mandates. The actual degree of coercion is higher than ETS2's market-instrument framing implies.

14.4 The Coercion Gap

The critical coercion risk arises in the gap between the pace at which fossil fuel costs rise and legal mandates tighten, and the pace at which affordable alternatives become available. If EVs remain unaffordable for lower-income households in 2030, and the 2035 ban on new ICE vehicle sales is maintained, and public transport remains inadequate in rural Ireland, the effective policy outcome is a mandate to own a technology that a significant portion of the affected population cannot afford, combined with financial penalties for non-compliance.

That every household will be able to acquire an EV is, judging by what Part 5 of this study establishes, clearly not the only plan. Traffic management policy documented in official strategy is simultaneously making car use unbearable through manufactured congestions, road narrowing, and parking removal. The general public operates under the impression that the worst-case scenario is universal electrification — and that if that proves impossible, the policy simply stalls. That impression is mistaken and it is not accidental. The full picture —

ETS2 making fossil fuel vehicles unaffordable while parallel instruments make driving itself intolerable regardless of fuel type — is nowhere presented to the public as a combined strategy. Each instrument maintains plausible separation from the others.

This gap has a further dimension that is rarely acknowledged: even if every household in Ireland were somehow able to acquire an EV, the electricity grid as currently constituted could not charge them all. EirGrid's own February 2026 assessment confirmed that Ireland faces a potentially challenging situation meeting electricity demand through 2028, with 200–400 MW of additional generation capacity required in the early 2030s. Data centres alone are projected to consume 30–32% of Ireland's total electricity by the early 2030s, competing directly with the EVs and heat pumps the policy demands. The policy is applying compulsion toward an outcome — universal EV and heat pump adoption — that the physical infrastructure of the country cannot currently support, and that the grid expansion programme has not committed to delivering on a timeline consistent with the policy's own mandates. The coercion is being applied to a system that cannot physically sustain its own intended endpoint.

It should be noted that a €18.9 billion grid investment programme was approved in December 2025 for 2026-2030, with infrastructure intended to support up to 1 million EVs. This does not alter the fundamental concern: the investment timeline and ETS2's operational timeline are not synchronised. The grid capacity constraint identified by EirGrid binds precisely during ETS2's critical early years of 2028-2030, before the investment programme's benefits are fully realised. The coercion is being applied before the infrastructure exists to support its intended outcome.

Ireland's SCF allocation of approximately EUR 663 million over six years is structurally insufficient to fund the EV subsidies, public transport investment, and building retrofits needed to close this gap for a country with Ireland's specific characteristics. Divided across a population of 5.4 million over six years, it amounts to approximately €122 per person in total — less than the cost of filling a car's fuel tank twice. It is not a just transition fund. It is a rounding error on the cost of the transformation it is supposed to cushion.

The coercion is not a risk. It is the architecture. And for the majority — as the electorate demonstrated when the Green Party was all but eliminated at the last general election — who would object and do not submit voluntarily, it is practically inevitable.

WARNING: CRITICAL FINDING

The level of coercion inherent in ETS2 — when combined with the parallel regulatory environment and assessed against the availability of alternatives in rural Ireland — is considerably higher than the policy's market-mechanism framing suggests. For a substantial portion of Ireland's rural and low-income population, ETS2 does not offer a choice between fossil fuels and alternatives. It imposes increasing costs on a necessity, on a population without the capital or infrastructure to exit that necessity, while providing insufficient compensatory funding to bridge the gap — and while the grid that is meant to power the alternative cannot yet support the demand the policy is creating.

PART 15 — QUANTIFIED CLIMATE IMPACT: WHAT THE POLICY DOES AND DOES NOT CLAIM

15.1 What the Policy Claims

- A 42% reduction in covered sector emissions by 2030 vs 2005 levels.
- Contribution to the EU Fit for 55 target: 55% net GHG reduction by 2030 vs 1990.
- Support for the path to 90% net GHG reduction by 2040 and climate neutrality by 2050.

These are emission reduction targets expressed in megatonnes of CO2 equivalent. They do not quantify the effect on actual climate variables: global or regional air temperatures, sea surface temperatures, sea levels, or weather pattern frequency.

15.2 What the Policy Does Not Claim

Neither ETS2 documentation, the EEA briefings, the European Climate Law, nor any associated policy document reviewed for this study provides:

- A quantified estimate of the reduction in global mean surface temperature attributable to EU emissions reductions under ETS2 over any timeframe.
- A quantified estimate of the reduction in European air or sea temperatures attributable to ETS2 over 30-40 years.
- A quantified estimate of the reduction in frequency or intensity of extreme weather events attributable to ETS2.
- A comparison between the temperature impact of EU action in isolation versus global inaction.

15.3 Why This Cannot Be Reliably Derived

- Climate is a global system: The EU accounts for approximately 7-8% of current global GHG emissions. ETS2 covers a subset of EU emissions — road transport and buildings — representing roughly 10-12% of EU total, or less than 1% of global emissions. The global temperature impact of changes to less than 1% of global emissions, over 30-40 years, is not zero but is extremely small relative to scientific uncertainties.
- Temperature response lags: Even if all global emissions were stabilised today, atmospheric CO2 concentrations would continue driving warming for decades due to thermal inertia. The temperature impact of a 42% reduction in one sector in one region over the next decade is not detectable against this background within any policy-relevant timeframe.
- Counterfactual dependency: The meaningful question is not what temperature reduction ETS2 causes in isolation, but what temperature reduction results from global collective action of which ETS2 is part, compared to a world with no action. ETS2's contribution to that collective scenario is theoretically present but not independently quantifiable as a temperature outcome.
- Model uncertainty: Integrated assessment models can estimate temperature ranges under different emission scenarios, but uncertainty bands are typically plus or minus 0.5 degrees C or more at the 2050 horizon. Attribution of specific policies to specific temperature fractions within those ranges is not scientifically credible at the level of individual instruments.

15.4 The Implications for Proportionality Assessment

The absence of quantified temperature impact estimates is not a trivial gap — it is the central gap in assessing whether the policy's costs are proportionate to its benefits.

ETS2 imposes significant, quantifiable and distributable costs on specific populations — particularly rural, low-income, elderly and agriculturally dependent households in countries like Ireland. These costs are expressed in euros per litre, euros per year, and ultimately in impacts on the ability of people to heat their homes, reach their workplaces, and sustain their livelihoods.

The corresponding benefit — avoided climate damage — might be theoretically present but is expressed only in terms of emission reductions, not in terms of temperature avoided, extreme weather events prevented, or human welfare preserved. A policy that imposes EUR 2,000 per year on a rural Irish household cannot be assessed for proportionality against a benefit expressed only as a quantity of CO2 not emitted, without a further step: translating that emission reduction into avoided harm to the people bearing the cost. That step is not provided.

UNADDRESSED REALITY

ETS2 does not provide, and cannot reliably derive, a quantified estimate of its impact on air or sea temperatures, extreme weather frequency, or any other direct climate variable, over any timeframe, for implementation limited to the EU. This is not a criticism of the underlying climate science, which is sound. It is a statement about what the policy can and cannot claim regarding its benefits to those who bear its costs. The costs are precisely quantifiable and fall on specific, identifiable populations. The benefits are not quantified in terms that allow direct comparison. A policy cannot be formally assessed as proportionate when its costs are measurable and its benefits, to those bearing them, are not.

CONCLUSION — SYNTHESIS AND OVERALL ASSESSMENT

This study set out to conduct an independent critical analysis of ETS2 as it applies to Ireland. What it has found is not a well-intentioned policy with manageable implementation challenges. It has found a policy whose primary objective is the elimination of fossil fuel use from everyday life, and whose treatment of the people who depend on those fuels as a matter of basic necessity — for warmth, mobility, food production, fishing, and survival in emergencies — is, at best, a managed secondary concern.

The policy does not state this. It speaks of incentives, market signals, and a just transition. But its structure tells a different story. The cap on fossil fuel use declines annually and without reversal. The price ceiling disappears after three years. The alternatives the policy assumes exist — affordable EVs, heat pumps, public transport, adequate grid capacity — do not yet exist for a large part of the Irish population and cannot be made to exist within the policy's critical pricing window. The fund provided to bridge the gap is time-limited, insufficient, and dependent on national implementation competence Ireland has not yet demonstrated.

The mechanism, stripped of its language, is this: make the current system unaffordable; assume people will find alternatives; provide limited transitional support for those who cannot. For those in urban areas with access to alternatives, this is a possibility — and an objectionable one given what Part 5 of this study establishes. For those in rural Ireland — the farmers, the fishers, the elderly, the low-income, the isolated, the medically dependent — it is coercion through the economics of necessity. They are not being offered a choice between fossil fuels and something better. They are being made unable to afford the only option available to them, while being told the alternatives are coming.

Core Findings

Primary objective versus stated objective:

ETS2's primary objective is the elimination of fossil fuel use in transport and buildings. This is not stated as such — the language is of incentives and market signals — but it is the structural reality of a mechanism with a declining, non-reversible cap and no endpoint other than zero fossil fuel combustion. The welfare of those who currently depend on fossil fuels for necessities is addressed through a time-limited transitional fund. It is not a co-equal priority. It is a managed externality.

Declared intent versus actual impact:

The policy assumes the existence of affordable alternatives that do not yet exist for much of Ireland's rural population. It assumes settlement patterns, transport infrastructure, and grid capacity that Ireland does not have. It uses the language of choice and market signals while structurally removing the conditions under which genuine choice is possible for the most vulnerable. These are not implementation risks. They are design features.

Ireland's 0.08% global emissions share:

According to the EU Joint Research Centre's Emissions Database for Global Atmospheric Research (EDGAR, 2024), Ireland's total fossil CO2 emissions in 2024 were 32,569 kilotonnes — approximately 0.08% of global fossil CO2 emissions. Those who argue Ireland should bear its fair share within the EU framework should note that Ireland represents 1.2% of EU population but produces approximately 1% of EU emissions — already underperforming its population-proportional share within the very framework they invoke. The fair share argument, pursued to its own logical conclusion, argues for less Irish burden, not more. What this policy actually asks of Ireland — given its island geography, dispersed settlements, and complete dependence on fossil fuels for rural mobility and heating — is not a fair share. It is a disproportionate one imposed without consent. The suffering this policy intends to impose on Ireland's rural population, its farming and fishing communities, its elderly, its low-income households, its coastal towns, and its people dependent on medical equipment — all of this is being imposed in exchange for a contribution to global emission reduction that

cannot be quantified as a temperature impact, that represents less than one tenth of one percent of the global total, and that will be entirely negated if a single large emitting nation increases its output marginally. This is not an argument against reducing emissions as a genuine and measurable objective. It is an argument about proportionality — and the proportionality case against ETS2 as applied to Ireland is devastating.

Energy supply resilience:

Storm Eowyn (January 2025) demonstrated concretely what extended electricity outage means for rural Ireland: up to 768,000 premises without power, some for nearly two weeks, an elderly man dead when medical equipment lost power, and communities surviving on petrol generators, oil boilers, and the ability to drive to functioning areas. ETS2 is designed to eliminate every one of those fallbacks. It contains no provision for what replaces them. This is not a remote or speculative risk — it is a documented recent event serving as a template for what a fully electrified Ireland will face with no fossil fuel backup.

Agriculture and fisheries:

Ireland's farmers face direct ETS2 costs of EUR 2,300-11,500 or more per year in additional fuel costs alone — on operations where the bottom third are already at negative net margins, with no ability to pass costs forward, and where the dominant emissions the policy claims to address are outside ETS2's scope entirely. Ireland's fishing fleet faces the same price-taker problem with no technological exit route whatsoever — a sector made entirely invisible in ETS2's mitigation framework, as demonstrated by the April 2026 emergency fuel subsidy required to prevent large-scale fleet decommissioning.

BER ratings and policy integrity:

A verified, documented case demonstrates a sevenfold discrepancy between a property's theoretical BER D1 rating and its actual measured energy consumption of A2 equivalent. The BER methodology explicitly penalises fireplaces and oil heating regardless of actual use. No national comparative audit of BER ratings against actual measured consumption exists. Any policy that compels retrofit on the basis of BER ratings, without first validating those ratings against real-world performance, is proceeding on an unverified evidence base.

Poverty as sustainability:

The mechanism by which ETS2 will achieve a significant portion of its emission reduction targets is not technological substitution but engineered scarcity. When fuel becomes unaffordable, people consume less of it. A household too poor to heat its home adequately, or too financially strained to drive to work, produces fewer emissions. In the policy's metrics, this counts as success — indistinguishably from a household that has transitioned to clean technology. There is no mechanism in ETS2 that distinguishes between these two outcomes. Poverty and sustainability are recorded identically. If BER-based retrofit interventions are additionally applied to homes that did not need them, the claimed gains may be partly illusory — correcting a flawed theoretical baseline rather than delivering real-world improvement. This policy may, in a significant portion of its claimed achievements, be counting engineered poverty as green progress.

Climate impact quantification:

No document reviewed for this study provides a quantified estimate of ETS2's impact on global or European temperatures, sea levels, or extreme weather frequency over any timeframe. The costs of the policy are precise and fall on specific people. The benefits cannot be expressed in terms that allow proportionality to be formally assessed. Ireland, representing 1.2% of EU population but producing only approximately 1% of EU emissions — already underperforming its population-proportional share within the very EU framework critics invoke — is being asked to impose the full machinery of this transformation on its most vulnerable citizens for a benefit that might be theoretically real but is minuscule even in collective global terms and remains, in Ireland's case specifically, entirely undetectable and unmeasurable. The 'fair share within the EU' argument, pursued to its own logical conclusion, argues for less Irish burden, not more.

It follows that the frequently cited 'cost of inaction' cannot be quantified for Ireland's specific contribution either. A cost defined as the consequence of failing to achieve an unquantifiable benefit is itself unquantifiable. Assertions to the contrary should be required to show their working.

Institutional path dependency:

One further consequence deserves naming. ETS2's implementation generates its own institutional momentum. The professional infrastructure it creates — BER assessors, retrofit administrators, carbon compliance officers, Social Climate Plan coordinators — becomes, over time, economically dependent on the policy's continuation. This is not a conspiracy. It is how large regulatory programmes work. But it means that the window for honest review and correction narrows with each year of implementation, as more livelihoods, more institutional budgets, and more professional identities become attached to the narrative the policy requires. If the evidence base underlying that narrative — for example, BER ratings that have never been validated against actual measured energy performance at national scale — turns out to be flawed, the cost of acknowledging that flaw grows with every passing year. The time for independent scrutiny of its evidence base, its projections, and its actual outcomes is now — before the professional infrastructure of its continuation becomes too entrenched to question.

UNADDRESSED REALITY

ETS2, as this study has found, is a policy that prioritises the elimination of fossil fuels above the welfare of the people who depend on them. For Ireland specifically — an island nation of 0.08% global emissions, with dispersed rural housing, inadequate public transport, a constrained electricity grid, a uniquely vulnerable agricultural and fishing sector, and a demonstrated inability to maintain electricity supply for all its citizens through major weather events — the policy as currently designed and resourced does not represent a proportionate or just transition. It represents the imposition of engineered economic scarcity on necessities of life, with insufficient alternatives, insufficient funding, no resilience provisions for emergencies, an unvalidated evidence base for building intervention, and no quantifiable climate return commensurate with the human cost it intends to exact. This policy, applied to Ireland in this form, is disproportionate, inadequately resourced, structurally coercive for those without alternatives, and — in the worst realistically possible emergency scenario — potentially dangerous to human life.

PART 16 — CRITICAL FINDINGS AND RECOMMENDED IMMEDIATE ACTIONS

The findings of this study lead to one overriding conclusion: this policy should not proceed in its current form. The case for that conclusion rests not on opposition to environmental goals but on the complete absence of the foundational work that should have preceded any policy of this scale and coercive character. What follows identifies the actions that are immediately required.

16.1 Independent Assessment of Human and Practical Feasibility — Before Any Further Implementation

Every proposed measure under ETS2 must be independently assessed for feasibility before any further implementation proceeds — and that assessment must extend beyond financial modelling. Feasibility in policy discourse defaults to cost: funding gaps, projections, subsidy requirements. That framing is inadequate, and those who wish to dismiss this study's findings will attempt to reduce it to a financial objection. It is not.

The feasibility that has never been assessed is human feasibility: what people are being asked to do, how fundamentally they are being asked to change their daily lives, on what timeline, with what support, and in return for what demonstrable benefit. People are being asked to accept significant hardship — with grave consequences for some — in exchange for a climate improvement that cannot be quantified, cannot be attributed to Ireland's specific contribution, and cannot be detected against global emissions in which Ireland accounts for 0.08%. That is a question of human proportionality, and it has never been answered.

There is a further failure of process that this study considers equally serious: the populations most directly affected by ETS2 — rural communities, farming families, fishing communities, elderly people in dispersed housing — have never been told that the policy's underlying logic presupposes a reorganisation of where and how they live. The embedded assumptions about settlement patterns, commuting behaviour, and residential density that are required for the policy's projected emission reductions to materialise have never been put to a public consultation, never stated in any policy communication directed at the affected population, and never subjected to democratic scrutiny of any kind. This policy is scheduled to become fully operational in 2028 — within two years of this study. The people it will most affect have, in the vast majority of cases, no idea that this is coming. That is not an acceptable basis on which to proceed.

It should not need stating in a modern European democracy, but given recent practice in Ireland it apparently does: genuine consultation means citizens have the right to refuse, and that refusal must be respected. Politicians exist to carry out the will of the people, not to override it. What has become customary in Ireland — a process in which the decision is already made and the population is invited only to comment on how it will be implemented — is not consultation. It is notification. For a transformation of this scale, nothing less than genuine democratic consent is acceptable. The party most associated with this policy's promotion was comprehensively rejected at the polls in November 2024. The government that committed Ireland to this trajectory no longer holds a mandate for it. This policy should not proceed in its current form.

It is worth noting that Canada introduced a directly comparable carbon pricing mechanism on transport and heating fuels, also justified on climate grounds and also applied to households without adequate transitional alternatives in place. Following sustained public opposition and widespread protest, the Canadian government cancelled the consumer carbon tax in March 2025 — not modified, not delayed, but cancelled. This demonstrates two things directly relevant to this study: that policies of this kind, once their human consequences become visible, are capable of generating the political will for reversal; and that the reversal, when it came, required a government willing to act on the expressed will of its citizens rather than override it. Irish politicians may be tempted to argue that Canada's position is fundamentally different — that Ireland, as an EU member state, has no such option. That argument does not withstand scrutiny. When sufficient political will existed among member states, ETS2 was already delayed by a full year in November 2025, driven by Poland, Hungary, Slovakia, France, Italy, Romania, and Czechia — seven countries that declined to accept the policy

on its original terms. Romania has since announced it will not introduce ETS2 until 2031. The framework has already demonstrated that it can move when pushed. The EU obligation is real — but it is not immovable, and where there is genuine political will, there is a mechanism. The question is whether Ireland's government has that will. It should also be said plainly: the existence of a legal framework that makes it procedurally difficult to undo something does not make that thing right. If a policy is unjust, the appropriate response is to challenge the framework that protects it — not to cite the framework as justification for continuing the injustice.

16.2 Fireplaces and Solid Fuel Capacity Must Be Afforded Protected Status

Open fireplaces and solid fuel heating capacity in existing Irish homes should be afforded explicit protected status as features of cultural heritage and proven emergency resilience value. BER assessments should be prohibited from reducing a property's rating on the basis of their presence. Retrofit programmes should be prohibited from requiring their removal or the sealing of chimneys as a condition of grant approval or compliance. The capacity to make fire is not a legacy inefficiency to be engineered away. Research published in Nature in December 2025 established that deliberate human fire-making extends at least 400,000 years into the past — and evidence of fire use extends beyond one million years. It is a demonstrated survival mechanism whose value was confirmed as recently as January 2025, and whose removal from Irish homes — by bureaucratic mandate rather than individual choice — is an act of institutional recklessness and bureaucratic impertinence that no legitimate energy policy should contemplate.

16.3 The Role of Policy Bodies Must Be Redefined

Bodies such as the Sustainable Energy Authority of Ireland have accumulated both advisory and effectively policy-making functions in the green transition. This conflation of roles is structurally problematic. An organisation whose institutional mandate and funding are tied to the advancement of a particular programme cannot be relied upon to provide impartial assessment of that programme's shortcomings. These bodies should return to genuinely advisory roles — informing and supporting those who choose to transition voluntarily — without the power to impose obligations, penalise traditional features of homes, or certify compliance with standards that have not been independently validated against real-world performance.

16.4 Fossil Fuels and Traditional Energy Options Must Be Preserved

The elimination of fossil fuels as an available option — rather than as a preferred or subsidised choice — is not a necessary condition of decarbonisation. It is a policy choice, and one whose consequences this study has documented in detail. Voluntary transition is entirely legitimate. People who drive predictable distances, can plan their journeys around charging infrastructure, and can afford the upfront cost of an electric vehicle should by all means be encouraged to make that choice — if they can afford it, and if the grid can support it. People who cannot, or who do not wish to, should not be compelled to do so through escalating financial penalties that leave them with no practical alternative.

The reason this matters extends beyond individual preference. During Storm Eowyn, it was the people who still have access to petrol cars, oil boilers, solid fuel stoves, and open fires — access this policy is actively working to remove — who were able to help those around them. The most vulnerable during that outage were not those who had failed to engage with the energy transition. They were those who had already done what this policy demands of everyone. They were isolated and helpless precisely because the diversity of energy options had already been removed from their lives. If that diversity is removed from everyone, there is no one left to help when the system fails.

Diversity of energy sources is a permanent requirement of genuine resilience, not a transitional concession. A system dependent on a single energy source is, by definition, a single point of failure — a principle understood in every other domain of critical infrastructure. Open fireplaces carry both proven emergency value and deep

cultural significance. Their penalisation in BER ratings and their removal through retrofit mandates eliminates a demonstrated resilience asset that no electrical system can replace when the grid is down. The human capacity to make fire and heat a dwelling with it predates agriculture, writing, and every institution of governance our species has ever produced. Through BER penalisation and retrofit mandates that seal chimneys and remove solid fuel appliances, this policy is attempting to legislatively remove that capacity from people who currently possess it. No work of dystopian fiction has imagined a world in which fire itself is taken from people. Those designing this policy appear to have no such failure of imagination.

Retaining access to fossil fuels as backup carries no obligation to freeze their environmental performance — continued improvement in combustion efficiency and emissions reduction through better technology remains entirely compatible with keeping them available.

16.5 On Price Signals and What That Language Actually Describes

The policy consistently describes its mechanism as providing a price signal — an economic incentive that encourages consumers to change behaviour by making one option more expensive relative to another. This language implies that the recipient has genuine options to choose between. For a rural Irish household with no EV charging infrastructure within practical reach, no public transport, no capital for retrofit, and no affordable electric heating alternative, there is no signal. There is only an escalating cost imposed on necessities, with no exit. The term price signal is, in that context, a euphemism. What it describes, for those without alternatives, is a penalty — one that rises without limit after the soft price ceiling expires in 2030, applied to people who have been given no means of avoiding it.

It should also be acknowledged that the price signal mechanism might work in the narrow technical sense, that artificially inflated costs will suppress consumption among those who cannot afford them. The question the policy does not ask is whether normalising the use of engineered financial pain as a governance instrument, training a population into approved behaviour through escalating cost rather than genuine choice, is something a democratic state should be doing at all.

There is a particular irony in this language worth naming directly. Those who deploy the term price signal to justify the deliberate inflation of fuel costs refused to treat Storm Eowyn as any kind of signal at all — nearly a million premises without power, medical equipment failing, communities cut off for two weeks, an elderly man dead. When nature demonstrated what concentrated dependence on a single centrally supplied energy source looks like when it fails, the response was that the public had drawn the wrong lessons. That is the critical vulnerability of electricity this policy proposes to make universal and unavoidable. Petrol or diesel in a car's tank, fuel in a generator, firewood stacked behind the house, turf in a shed — all of it remains physically present and available until it is needed and used. It cannot be remotely switched off or disabled. It belongs to the person who holds it, and that physical independence is precisely what kept people alive during Eowyn. Electricity, by contrast, exists only in the moment of its supply. The instant the grid fails — whether by weather, accident, or deliberate action — everything dependent on it stops simultaneously, and the individual has nothing in reserve and no capacity to improvise. That vulnerability is worth noting for one further reason beyond weather and accident. It cannot be ruled out that power infrastructure — switching stations, substations, grid interconnectors — could be targeted by terrorists, saboteurs, or hostile state actors, with consequences far more severe and widespread than would be possible today, when the population retains independent fallback options. It equally cannot be ruled out that some future “visionary leader”, even more enlightened than those of today, might conclude that scheduled interruptions are for the common good. Both risks are unacceptable. This policy is building the infrastructure that would make both possible — and systematically removing every alternative that would allow people to survive either.

If all alternatives were genuinely in place — if public transport served rural Ireland adequately, if EVs were affordable at all income levels, if the grid was demonstrably resilient, if BER ratings had been validated — there would be no need for a price signal at all. People would transition because the alternative was genuinely better, not because the current option had been made unaffordable. People who are shrewd enough — and right — to maintain their resilience through diversification of energy sources under their own control should never be forced away from that position. Forcing them will be at the peril of those who do the forcing. This too should not

need stating. The fact that coercive pricing is considered necessary is itself evidence that the alternatives are not yet adequate. The policy applies compulsion before the conditions for voluntary choice exist. That is not transition. That is an imposition.

16.6 A Structural Warning From the Broader Historical Record

This study would be incomplete without noting a pattern that extends well beyond ETS2 or the green transition. Throughout history, policy frameworks that have used economic mechanisms to compel fundamental changes in how people live, work, and organise their material lives — invariably framed as being for the collective good, as correcting market failures, or as managing necessary transitions — have produced, with remarkable consistency, outcomes their architects did not intend and could not contain. The mechanisms vary. The language of justification changes with the era. What does not change is the pattern: compulsion disguised as incentive generates resistance; resistance is managed through further compulsion; the costs fall most heavily on those with least capacity to adapt; and the eventual reckoning, when it comes, is proportionate to the degree of dispossession that preceded it.

ETS2 does not belong to the most extreme examples of this pattern — but it has the potential to move closer to them, and the structural conditions and leadership behavioural patterns for doing so are already present and observable. It shares key characteristics with historical precedents that did reach those extremes: a uniform mandate applied without adequate regard for the specific conditions of those it affects, a financial mechanism that functions as a penalty for those without alternatives, an evidence base that has not been independently validated, and an institutional infrastructure that has a vested interest in the policy's continuation regardless of its outcomes.

The commentary referenced earlier in this study — Professor Daly's Irish Times piece, published while hundreds of thousands of people across Ireland were still without power in the aftermath of Storm Eowyn — warrants closer examination at this point, when the full weight of the study's findings has been established. What should have been, and in any honest reckoning would have been, a moment of sobering reassessment — a demonstration that the policy's intended endpoint carries demonstrable and serious risks for real people — was instead used as an occasion to correct the public. The argument made was that the real lesson of the storm was that Ireland needed denser development and more compact communities; that the problem was not the policy's incompatibility with how Irish people live, but the way Irish people live. Those warming themselves by open fires and running petrol generators to keep medical equipment functioning were, in this framing, drawing the wrong conclusions. The piece expressed dismay that commentators had praised open fires and diesel generators, as if the public's rational appreciation of what had just kept them alive was an obstacle to be managed rather than evidence to be weighed.

This was not an isolated comment. It was published in a newspaper of record, amplified without challenge, and echoed in various forms across media commentary in the weeks that followed. The absence of any equivalent counter-argument being given comparable prominence is itself significant. It reflects a media and institutional environment sufficiently invested in the policy's narrative that counter-evidence — even counter-evidence of the most direct and human kind — is processed not as cause for pause but as an occasion to reinforce the original position. A system that cannot be corrected by its own consequences is not a policy framework. It is an ideology.

This connects to one historical precedent in particular that bears a disturbing structural resemblance to what is being attempted here. There was a political campaign, organised and enforced by a state at the height of its ideological confidence, whose central objective was the eradication of what its architects called the Four Olds: old customs, old culture, old habits, and old ideas. The premise was that a correct and necessary future required the systematic dismantling of the ways in which people had previously lived, thought, organised their households, worked their land, and understood their relationship to place and community. Those who resisted were branded as obstructing progress, clinging to the past, failing to understand what was required of them. The campaign did not ask. It did not consult. It proceeded on the basis that the ideology was correct and that the population's existing ways of living were the problem to be solved. A further characteristic of that template is worth noting: participation was not merely required — it had to be visible. Under that campaign, everyone

had to, and everyone had to be seen to. If ETS2 reaches its intended endpoint, the same will apply here — everyone will have to, and everyone will have to be seen to. The structural logic of ETS2 — that an ideologically defined correct future requires the coercive elimination of existing ways of living deemed incompatible with it, that resistance reflects ignorance or obstruction rather than legitimate preference, and that the evidence produced by the real world against the policy's assumptions must be reframed rather than heeded — maps onto this template with a precision that is not comfortable to acknowledge. The campaign in question was the Cultural Revolution. The state was Mao Zedong's China. The methods were different. The scale was different. The casualties were of a different order. For the time being — and that qualifier is earned by the evidence already presented in this study: a policy that eliminates every fossil fuel fallback and every independent means of survival — petrol vehicles, oil boilers, solid fuel stoves, and the fireplace that human beings have relied upon since before the first written word — from a dispersed rural population dependent on electricity for heating, mobility, and medical equipment, and that has already demonstrated through Storm Eowyn that it will not revise its course in response to evidence of the human cost, is a policy whose potential for casualties is not hypothetical. It is documented, foreseeable, and unaddressed.

It is true that the European Commission’s Green Deal strategy does not state that it is aiming for anything so drastic, nor does it identify any Four Olds that must explicitly go. Nevertheless, for ETS2 to reach its intended endpoint, the changes required are radical and comparable in scale. The freedom to choose where to live, or to remain where one has always lived. The freedom to travel. Even something so simple as the freedom to make fire in one’s own dwelling when everything else has failed. These are among the many ‘olds’ designed to disappear quietly for ETS2 to reach a target whose impact on the climate remains, as this study has established, entirely undetectable and unmeasurable.

If this policy proceeds regardless — if the carbon price rises, the infrastructure obligations tighten, and the retrofit mandates expand — and if a major weather event or any other foreseeable or unforeseeable crisis then causes loss of life among people who have been stripped of their ability to heat their homes or reach emergency services, and who objected to this outcome, resented the compulsion that produced it, and in many cases foresaw it clearly long before it happened — not because they had access to specialist analysis, but because they were capable of reading the pattern of what was being imposed on them and tracing it to its logical end — the social and political consequences would be severe. A population that has been systematically dispossessed of its mobility, its heating options, and its capacity to improvise in emergencies — while the value of their dwellings was being simultaneously and administratively reduced by the very system that caused it all, through BER-linked mortgage restrictions and rental prohibitions enforced by institutions that bear no responsibility for the consequences and acknowledge no connection to them — that then suffers preventable harm as a direct consequence, and that was told throughout that its concerns were unfounded and its resistance was obstructive, is a population with legitimate and profound grievances. It would be unrealistic to assume the eventual response would remain within conventional political channels. This is not a prediction. It is an observation about what history consistently shows happens when a state removes people's means of self-sufficiency, dismisses those who object, and then fails to replace what it has taken with anything adequate.

Also worth noting: ETS2 is designed to phase in gradually, presented as giving people time to adjust. Whatever the intention behind that, the additional inevitable effect is worth noting: at any given moment only a limited segment of society will be bearing the full weight of the policy, while the rest will not yet have reached the point where it affects them directly enough to compel a response — or will already have complied, and may be more depleted than resentful. Each affected group will find itself relatively isolated — told their concerns are their own problem, that the policy is working well for everyone else. A preview of this was already visible during the recent fuel cost protests. Those most immediately exposed organised and made their concerns public. The broader population was sympathetic but did not stand alongside them with the urgency that full awareness of what is coming would have produced. Whether this graduated exposure is designed or merely convenient is not something this study can establish. What the fuel protests already demonstrated is that it works.

A final matter this study cannot establish, but which the evidence it presents makes difficult to ignore, is the emergence of certain disturbing patterns of governance observable across the policy areas examined here. The first is manipulation — for instance, the selective amplification of scientific or expert voices that support a given agenda while contra-evidence, dissenting analysis, and electoral results that reject it are disregarded or treated as irrelevant. The second is the manufacture or deliberate exacerbation of problems — for instance, BER misrating that penalises efficient homes, or traffic engineering that strangulates movement — with

compliance then presented as the only rational response, the connection to the problem's origin unacknowledged. The third is the studied distancing from responsibility for predictable consequences — for instance, the state designing the methodology, mandating the standards, and engineering the infrastructure, while declining to acknowledge any connection to the outcomes those interventions predictably produced. And the fourth is coercion — the systematic removal of alternatives until submission becomes the only option available, documented in Part 14 of this study. This pattern would, in all likelihood, extend to the gravest possible outcome. Should mass casualties occur in a future fully electrified Ireland as a direct consequence of eliminated resilience — the very resilience this policy systematically removes — it is reasonable to expect that the weather, geopolitical instability, or the failures of specific foreign actors would be identified as the cause. Anything and anyone would be blamed but the architects of a policy that made such an outcome predictably possible by setting the stage for exactly that to happen. Predictably, they would be found back on stage in a different role, expressing concern the loudest. What these four patterns are signs of, taken together and across the full breadth of public life in which they appear, is a subject worthy of a critical study of its own.

A transformation imposed through the systematic removal of options is not durable — and the history of attempts to make it so is consistent, well-documented, and does not end well for anyone, including those who initiated it.

FINAL REMARKS

The observations that follow are not intended to agitate. They are intended to prevent the need for agitation, by identifying, while there is still time, the trajectory that makes it inevitable if uncorrected.

In essence, in order to achieve an undetectable contribution to global climate targets, this policy, and the coordinated instruments examined alongside it in this study, are designed to make most of what people need more expensive and much of what they already own worth less, suppressing consumption and mobility through engineered scarcity and calling it a green transition to sustainability, while removing the means of survival that would protect them when the system it is building fails, and with all other implications described in this study coming with it.

On a broader note, a government that actively pursues this is not holding its end of the social contract, to put it mildly. That contract can be described simply: the people pay taxes to maintain a state, and the state in return upholds laws agreed upon by the majority, maintains the infrastructure necessary for life, and ensures that everyone, including those who govern, can live freely, pursue their lives and ambitions, and do so in a safe and predictable environment, provided they break no agreed law and cause no harm to others.

What is happening now is the opposite. The government is not merely implementing rules that were never agreed upon by the majority, it is implementing rules that were refused by the majority. The party that most prominently promoted this policy was effectively rejected at the last general election. The policy continues regardless.

The very people whose taxes fund the state are watching those taxes being used against them. Something as simple as being able to stop somewhere is being removed by roads being narrowed without their consent. Infrastructure is being imposed without consultation, making them massively inconvenient in their own streets. Housing policy is making their homes worth less if they refuse to submit to it. And “signals” are being used to train them into approved behaviour in the same manner used to condition laboratory animals.

If anyone should be responding to “signals”, it is public servants elected to carry out the will of the people.

This approach to governance has to be reversed, because as it is, it is completely illegitimate. If it is not reversed, there will be a reckoning, as there has always been throughout history when the distribution of power became this unbalanced.

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